<b>PRODUCT:</b> ACET	ONE (AC) REVISION:	9	DATED: 26/01/17		PAGE 1 OF 11
Р	<b>RODUCT SI</b>	PEC	IFICATION	[	
	cetone N Grade				
Alternative Name					
Product Grade 2-	-propanone				
Specification Reference A	.C/6 (02/10)				
		S SPF	CIFICATION		
PROPERTY			VALUE		TEST
Acetone content	% mass		99.5 min		
Density	kg/l @ 20°C		0.790 min - 0.792	max	D3505
Water Content	% mass		0.3 max		D1364
Acidity	% mass as aceti	c acid	0.002 max		BS 509
	(fixed)				
Appearance			Clear colourless lic	quid	Visual
Non-Volatile Matter	%		0.001 max		D1353
Colour	Pt/Co Scale		5 max		D1209
	r v Co scale		Э шах		D1207
Distillation range	°C		1		D1079
(Incl. Bp 56.2°C)	°C		1 max	1:	D1078
Alcoholic impurities	、 、		Complies with BS		BS 509 (part 2):1984
Alkalinity (calculated as Ammonia			Complies with BS	limit test	D1614
Permanganate time	hours	SICAT	2 minimum PROPERTIES		D1363
PROPERTY	CONDITIONS			VAI	LUE
	CONDITIONS	UI		V 1 1 1	
Molecular mass				58.06	5
Density	20°C	kg/li	itre (vacuo)	0.790	)
Relative Density	20°C/20°C			0.791	1
Coefficient of Cubical expansion	per °C			1.487	<sup>7</sup> x 10- <sup>3</sup>
Change in Relative Density	per °C			1.14	x 10- <sup>3</sup>
Melting point		°C		-94.7	
Boiling point	1.013 bar	°C		58.2	
Change in boiling point	1013 bar	°C/n	nbar	0.029	93
Vapour pressure	20°C	mba	r	247	
Flammable limits					
Upper	20°C	% v	olume	13.0	
Lower	20°C		olume	2.6	
Flash point	Abel closed cup	°C		-18	
Auto ignition temperature	*	°C		465	
Specific heat (liquid)	20°C	kj/kg	g°C	2.18	
Specific heat (vapour)	20°C	kj/kg		1.28	
Latent heat		1 . 7		~= ^=	
(of fusion)		kj/kį		97.97	
(of vaporisation)	at boiling point	kj/k		501.1	
Heat of combustion	20°C	Mj/k	кg	30.86	
Critical temperature		°C		235.0	)
Critical pressure	2.50.0	bar		47	1.07
Volume Resistivity	25°C	ohm		4.2 x	10'
Thermal Conductivity	20°C	mW	ſ∕m °C	150	
Dielectric constant	20°C	20		21	
Refractive index	20°C	n <sup>20</sup> D		1.359	91
Refractive index					
	20°C	сP		0 322	,
Absolute viscosity Evaporation rate	20°C 21.5°C	cP		0.322 18.11	

### **PRODUCT: ACETONE** (AC) REVISION: 9

DATED: 26/01/17 NOTES PAGE 2 OF 11

Tennants ACETONE complies with the following standards:

European Pharmacopoeia British Standard BS 509:1987 American Standard ASTM D329-86 German Standard DIN 53247

### **Exclusion of Liability**

Information contained in this publication is accurate to the best of the knowledge and belief of Tennants.

Any information or advice obtained from Tennants otherwise than by means of this publication and whether relating to Tennants materials or other materials, is also given in good faith. However, it remains at all times the responsibility of the customer to ensure that Tennants materials are suitable for the particular purpose intended.

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### Health and Safety

A Material Safety Data Sheet has been issued describing the health, safety and environmental properties of this product, identifying the potential hazards and giving advice on the handling precautions and emergency procedures. This must be consulted fully before handling, storage and use.

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	PRODUCT: ACETONE (AC) REVISIO	ON: 9	DATED: 26/01/17	PAGE 3 OF 11
	SAF	ETY I	DATA SHEET	
1.	<b>IDENTIFICATION OF THE</b>	SUBS	TANCE/PREPAR	ATION AND COMPANY
1.1	Product Identifier			
	le Names Acetone			
CAS	Number 67-64-1			
EINE	ECS Number 200-662	-2		
REA	CH Registration Number 01-2119	471330-4	49-XXXX	
1.2	Relevant identified uses of the substance of	or mixtu	re and uses advised ag	gainst
	ides its application as a solvent Acetone is a			
Meth	nylmethacrylate, Methyl Isobutyl Ketone and	d Bispher	nol A	
Ident	tified Uses:			
Indu	istrial use:			
0	Generic exposure scenario (GES): Industri			e containing products (ES 1 - 11)
1	Manufacture, processing and distribution of	of substan	ices and mixtures *	
2	Use in laboratories			
3	Uses in coatings			
4	Use in binders and release agents			
5	Rubber production and processing			
6	Polymer manufacturing			
7	Polymer processing			
8	Use in cleaning agents			
9	Use in oil and gas field drilling and produc	ction oper	ations	
10	Blowing agents			
11 Dec f	Mining chemicals			
Prote	essional use:	onal Dra	access malaviant for A ac	tone containing products (ES 12 22)
12	Generic exposure scenario (GES): Professi Use in laboratories	Ional Pro	cesses relevant for Ace	tone containing products (ES 13 - 22)
13	Uses in coatings			
14	Use in binders and release agents			
16	Polymer production			
17	Polymer processing			
18	Use in cleaning agents			
19	Oil field well drilling and production opera	ations		
20	Agrochemical uses			
21	De-icing and anti-icing applications			
22	Explosives manufacture & use			
	sumer use:			
23	Generic exposure scenario (GES): Consum	ner uses o	of Acetone (ES 24 - 26)	
24	Uses in coatings			
25	Use in cleaning agents			
26	De-icing and anti-icing applications			
* Exa	amples for processing: use as an intermediat	e, use as	a monomer etc., use as	a solvent, use for the manufacturing of
resin	IS			
121	Details of the supplice of the sofety data sh	aaat		
	Details of the supplier of the safety data sh nants Distribution Limited	icet		
	elbottom Road			
	etham			
	chester			
M8 (				
	44(0)161 205 4454			
	44(0) 161 203 4298			
	il: msds@tennantsdistribution.com			
	Emergency telephone number			
	44(0)844 335 0001 (24 hours)			

, HAZA	DDC IDENT	E (AC) REVISION: 9 D.		
	RDS IDENT			
	on of the substan	nce or mixture		
Regulation 1272 Flam. Liq. 2; H2		Highly flammable liqu	id and vanour	
Eye Irrit. 2; H31		Causes serious eye irri		
STOT SE 3; H32		May cause drowsiness		
(EUH066)		Repeated exposure ma		or cracking
2.2 Label elem	ents	1 1	<i>. .</i>	C
Labelling (CLP	•)			
	<			
Signal Word		Danger		
Hazard Statem	ents:	Dunger		
	mmable liquid an	nd vapour		
	rious eye irritatio			
H336 May cause	e drowsiness and	dizziness		
		cause skin dryness and cracl	king	
Precautionary S			1.	
		s/open flames/hot surfaces –	no smoking	
		es against static discharge	coveral minutes De-	move contact lenses, if present and
easy to do so. $C$		mse cautiously with water 10	several minutes. Rel	move contact lenses, il present and
		lated place. Keep cool		
P405 Store lock				
	*	ner to hazardous or special wa	aste collection point	
2.3 Other hazar		1	1	
Vapours are more	derately irritating	g to the mucous membranes		
		c effect. Danger of metabolic	e acidosis	
	Gastric and intes			
Other symptoms	: Headache dizz			
		iness, nausea, unconsciousne		
3. COMP		FORMATION ON IN		
3. COMP Substances	OSITION/IN			
3. COMP Substances Chemical chara	OSITION/IN acterisation			
<b>3. COMP</b> <b>Substances</b> <b>Chemical chara</b> C <sub>3</sub> H <sub>6</sub> O = H <sub>3</sub> C-0	OSITION/IN acterisation CO-CH3	FORMATION ON IN		
3. COMP Substances Chemical chara C <sub>3</sub> H <sub>6</sub> O = H <sub>3</sub> C-0	OSITION/IN acterisation CO-CH3			Customs Tariff No.
<b>3. COMP</b> <b>Substances</b> <b>Chemical chara</b> $C_3 H_6 O = H_3C_4$ Acetone, Dimet	OSITION/IN acterisation CO-CH <sub>3</sub> hyl ketone, 2-Pro	FORMATION ON IN	GREDIENTS	Customs Tariff No.
B.COMPSubstancesChemical chara $C_3$ H $_6$ O = H $_3$ C-0Acetone, DimethCAS Number	OSITION/IN acterisation CO-CH <sub>3</sub> hyl ketone, 2-Pro EINECS Number	FORMATION ON IN panone, Methyl ketone REACH registration number	RTECS No.	
B.COMPSubstancesChemical chara $C_3$ H <sub>6</sub> O = H <sub>3</sub> C-0Acetone, DimethCAS Number	OSITION/IN acterisation CO-CH <sub>3</sub> hyl ketone, 2-Pro EINECS	Panone, Methyl ketone REACH registration	GREDIENTS	Customs Tariff No. 2914 11 00
B.COMPSubstancesChemical chara $C_3$ H <sub>6</sub> O = H <sub>3</sub> C-0Acetone, DimethCAS Number7-64-1	OSITION/IN acterisation CO-CH <sub>3</sub> hyl ketone, 2-Pro EINECS Number 200-662-2	FORMATION ON IN         panone, Methyl ketone         REACH registration         number         01-2119471330-49-XXXX	RTECS No.	
3.COMPSubstancesChemical charaCalled charaCalled charaCalled charaCAS Numberi7-64-1FIRST	OSITION/IN acterisation CO-CH <sub>3</sub> hyl ketone, 2-Pro EINECS Number 200-662-2	FORMATION ON IN         panone, Methyl ketone         REACH registration         number         01-2119471330-49-XXXX         URES	RTECS No.	
3.COMPSubstancesChemical charaCa HaC-0Acetone, DimethCAS Number57-64-14.FIRST4.1Description	OSITION/IN acterisation CO-CH <sub>3</sub> hyl ketone, 2-Pro EINECS Number 200-662-2	FORMATION ON IN         panone, Methyl ketone         REACH registration         number         01-2119471330-49-XXXX         URES	RTECS No.	
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<ul> <li>3. COMP</li> <li>Substances</li> <li>Chemical chara</li> <li>Cas H<sub>6</sub> O = H<sub>3</sub>C-4</li> <li>Acetone, Dimeth</li> <li>CAS Number</li> <li>67-64-1</li> <li>4. FIRST</li> <li>4.1 Description</li> <li>General Advice</li> <li>Move victim to find</li> </ul>	OSITION/IN acterisation CO-CH <sub>3</sub> hyl ketone, 2-Pro EINECS Number 200-662-2 C AID MEASU of first aid measure	FORMATION ON IN         panone, Methyl ketone         REACH registration         number         01-2119471330-49-XXXX         URES         sures	GREDIENTS RTECS No. AL3150000	
<ul> <li>3. COMP</li> <li>Substances</li> <li>Chemical chara</li> <li>Cas H<sub>6</sub> O = H<sub>3</sub>C-4</li> <li>Acetone, Dimeth</li> <li>CAS Number</li> <li>67-64-1</li> <li>4. FIRST</li> <li>4.1 Description</li> <li>General Advice</li> <li>Move victim to fivictim warm</li> </ul>	OSITION/IN acterisation CO-CH <sub>3</sub> hyl ketone, 2-Pro EINECS Number 200-662-2 CAID MEASI of first aid measures hair, put at rest	FORMATION ON IN         panone, Methyl ketone         REACH registration         number         01-2119471330-49-XXXX         URES         sures         st and loosen restrictive cloth	GREDIENTS          RTECS No.         AL3150000         ing. Do not allow vic	2914 11 00 tim to become chilled. Keep
<ul> <li>3. COMP</li> <li>Substances</li> <li>Chemical chara</li> <li>Cas H<sub>6</sub> O = H<sub>3</sub>C-0</li> <li>Acetone, Dimetl</li> <li>CAS Number</li> <li>Acetone, Dimetl</li> <li>Acetone, Dimetl</li> <li>CAS Number</li> <li>Acetone, Dimetl</li> <li>Aceton</li></ul>	OSITION/IN acterisation CO-CH <sub>3</sub> hyl ketone, 2-Pro EINECS Number 200-662-2 CAID MEASI of first aid measures hair, put at rest	FORMATION ON IN         panone, Methyl ketone         REACH registration         number         01-2119471330-49-XXXX         URES         sures	GREDIENTS          RTECS No.         AL3150000         ing. Do not allow vic	2914 11 00 tim to become chilled. Keep
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3.COMPSubstancesChemical chara $C_3$ H <sub>6</sub> O = H <sub>3</sub> C-4Acetone, DimetlCAS Number57-64-14.FIRST4.1DescriptionGeneral AdviceMove victim to frvictim warmIf victim is at riskInhalationMove victim to fibreathing becowhere required suSkin contactImmediately remplenty of water.Eye contactImmediately flusImmediately flusImmediate attentiIngestion	OSITION/IN         acterisation         CO-CH3         hyl ketone, 2-Pro         EINECS         Number         200-662-2         CAID MEASI         of first aid measi         resh air, put at rest         x of losing consci         resh air, put at rest         x of losing consci         resh air, put at rest         x of losing consci         resh air, put at rest         upply oxygen. In         ove any wetted c         Then cream your         h eyes with plent         ion of an ophthali	FORMATION ON INC         panone, Methyl ketone         REACH registration         number         01-2119471330-49-XXXX         URES         sures         st and loosen restrictive cloth         iousness, position and transposition         st and loosen restrictive cloth         cousness, position and transposition         st and loosen restrictive cloth         cousness, apply mouth to mouth         nmediately get medical attent         clothing, shoes or stockings.         skin. In case of skin irritation         ry of flowing water for 10 to 10         mologist	GREDIENTS          RTECS No.         AL3150000         ing. Do not allow vic         ort on their side. Call         ing.         a resuscitation or artificion         After contact with skin         After consult a physician         15 minutes holding ey	2914 11 00 tim to become chilled. Keep a physician immediately cial respiration immediately, n, wash immediately with soap an elids apart. Subsequently seek th
3.COMPSubstancesChemical chara $C_3$ H <sub>6</sub> O = H <sub>3</sub> C-4Acetone, DimetlCAS Number57-64-14.FIRST4.1DescriptionGeneral AdviceMove victim to frvictim warmIf victim is at riskInhalationMove victim to frIf breathing becowhere required suSkin contactImmediately remplenty of water.Eye contactImmediately flusImmediately flusImmediately flusImmediately flusImmediately diately flusImmediately flusImmediately flusIngestionIf swallowed, do	OSITION/IN         acterisation         CO-CH3         hyl ketone, 2-Pro         EINECS         Number         200-662-2         CAID MEASI         of first aid measi         resh air, put at rest         x of losing consci         resh air, put at rest         x of losing consci         resh air, put at rest         x of losing consci         resh air, put at rest         was irregular or o         upply oxygen. In         ove any wetted c         Then cream your         h eyes with plent         ion of an ophthali         not induce vomit	FORMATION ON INC         panone, Methyl ketone         REACH registration         number         01-2119471330-49-XXXX         URES         sures         st and loosen restrictive cloth         iousness, position and transposition         st and loosen restrictive cloth         cases, apply mouth to mouth         nmediately get medical attent         lothing, shoes or stockings.         skin. In case of skin irritation         y of flowing water for 10 to 10	GREDIENTS         RTECS No.         AL3150000         ing.         ort on their side.         Call         ing.         a resuscitation or artificion         After contact with skinon, consult a physician         15 minutes holding ey         nediately and show th	2914 11 00 tim to become chilled. Keep a physician immediately cial respiration immediately, n, wash immediately with soap an elids apart. Subsequently seek the

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TENNANTS DISTRIBUTION LIMITED HAZELBOTTOM ROAD, CHEETHAM, MANCHESTER M8 0GR TEL 44(0)161 205 4454 FAX 44(0)161 203 4298

	C) REVISION: 9	DATED: 26/01/17	PAGE 5 OF 11
4.2 Most import symptoms and effe			
Burning eyes and skin. Fatigue, nause			
In case of inhalation: For the develop			
large amounts of acetone by inhalation	1 of vapour or ingesti	on of liquid are necessary	(e. g. several thousand ppm of
acetone vapour).			
In case of ingestion: Gastric and inter		· · · · · · · · · · · · · · · · · · ·	ling days to defect in a manual inc
After contact with skin: Irritant. Rep		ause skin dryness or crac	cking, due to defatting properties.
No indication for sensitising propertie After eye contact: Causes serious eye			
4.3 Indication of any immediate me		nacial treatment needed	1
Combat acidosis. Monitor alkali reser			1
If breathing becomes irregular or ceas			icial respiration immediately
where required supply oxygen	es, apply mount to m	Juli resuscitation of artif	ierar respiration minieuratery,
Attention: several hours latency period	1 In severe cases pr	eumonia or a pulmonary	oedema may develop
5. FIRE FIGHTING ME		cumonia or a pumonary	ocacina nay acterop
	ASUKES		
5.1 Extinguishing Media	Dutin minh in a	don alaohal maintent f	m oorhon digwide water for
Suitable extinguishing media:	• • •	der, alconol resistant foai	m, carbon dioxide, water fog
Unsuitable extinguishing media:	Full water jet		
5.2 Special hazards arising from the			n at noom tomponations. Downers of
Highly flammable liquid and vapour reignition. In case of fire may be liber			ii at room temperature. Beware o
<b>5.3 Advice for fire-fighters</b>	aled: Cardon monox	de and carbon dioxide.	
Special protective equipment for fi	no fightone. Wear a	calf contained breathing	apparetus and shamical protective
clothing	re-fighters: wear a	sen contained breatining	apparatus and chemical protective
Additional information			
Hazchem-Code: 2YE			
Do not expose to high temperature.	Danger of burstin	or explosion Use fin	a water spray to cool endangered
containers		; of explosion. Use mi	te water spray to coor endangered
Move undamaged containers from im	mediate hazard area	if it can be done safely. I	Do not allow fire water to penetrate
into surface or ground water. Fire res			
with the regulations of the local autho			
Mixtures with 4% acetone mixed with		a flash point of 54°C	
6. ACCIDENTAL RELE	ASE MEASURE	S	
6.1 Personal precautions, protective	equipment and em	rgency procedures	
Eliminate all ignition sources if safe to	) do so. Remove pers		Wear a self-contained breathing
Eliminate all ignition sources if safe to apparatus and chemical protective clo	-	-	
apparatus and chemical protective clo	-	-	•
apparatus and chemical protective clor 6.2 Environmental precautions	thing. Solvent-resista	nt protective clothing reco	ommended.
apparatus and chemical protective clor 6.2 Environmental precautions Plug leaks if safely possible. Do not	thing. Solvent-resista allow to enter drains	nt protective clothing reco	ommended. ents or pits. When released into th
apparatus and chemical protective clor 6.2 Environmental precautions Plug leaks if safely possible. Do not environment, alert police and fire brig	thing. Solvent-resista allow to enter drains ade. Seal all low leve	nt protective clothing records, surface waters, baseme l rooms. Danger of explo	ommended. ents or pits. When released into th
<ul> <li>apparatus and chemical protective clor</li> <li>6.2 Environmental precautions</li> <li>Plug leaks if safely possible. Do not environment, alert police and fire brig</li> <li>6.3 Methods and material for conta</li> </ul>	thing. Solvent-resista allow to enter drains ade. Seal all low leve inment and cleaning	nt protective clothing records, surface waters, baseme el rooms. Danger of explo g up	ommended. ents or pits. When released into the posion!
<ul> <li>apparatus and chemical protective clor</li> <li>6.2 Environmental precautions</li> <li>Plug leaks if safely possible. Do not environment, alert police and fire brig</li> <li>6.3 Methods and material for contain In case of spill of large quantities: Data</li> </ul>	thing. Solvent-resista allow to enter drains ade. Seal all low leve inment and cleaning n spills and pump to	nt protective clothing reco s, surface waters, baseme el rooms. Danger of explo g up remove. Explosion prote	ommended. ents or pits. When released into th osion! ection required
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1 Precautions for safe handling dvice on safe handling ovide acquark ventilation, and local exhanst as needed.         covide acquark ventilation, and local exhanst as needed.         not breath ventilation, and local exhanst as needed.         se only explosion-protected equipment/instruments. Do not use air pressure.         recautions against fir and explosion         pays form sources of grintion - No smoking. Take precautionary measures against static discharges. Beware of ignition. Potentially explosive mixture may form within partially empty containers. Emergency cooling must be evolved for in case of a fire in the vicinity. Do not weld         2 Conditions for safe storage, including any incompatibilities equirements for storerooms and containers eep container dry. Keep container ightly closed in a cool, well-ventilated place. Protect from direct sunlight.         cel, stainless steel, and aluminium are stable container materials. Copper may be attacked.         not store together with combustible or self-igniting materials or any highly flammable solids. Peroxides may form ben product is exposed to light and air urther details         venther details         venther details         venther details         venther details         venter         venter         Venther       Long term         <		ONE (AC) REVISION: 9	DATED: 26/01/17	<b>PAGE 6 OF 11</b>
dvice on such handling ovide acquark ventilation, and local exhaust as needed. ovide room air exhaust at ground level. Concentrated vapours are heavier than air. Avoid the formation of aerosol. on oth beache ventilation, and ocyse. Wear protective equipment. see only explosion-protected equipment/instruments. Do not use air pressure: recaulions against fire and explosion protective optimiser and explosion in the wear of ginition. Potentially exploys containers, Emergency cooling must be voided for in case of a fire in the vicinity. Do not weld 2 Conditions for safe storage, including any incompatibilities equirements for safe storage, including any incompatibilities equirements for safe storage, including any incompatibilities equirements for storerooms and containers eep contained rely. Keep container tightly closed in a cool, well-ventilated place. Protect from direct sunlight, teel, stainless steel, and aluminium are stable container materials. Copper may be attacked. Insuitable container/equipment material: May attack plastics. Iake sure spills can be contained, e.g. in sump pallets or kerbed areas. Due to danger of explosion, prevent leakage o pours into cellist, flues and dirches. ints on joint storage on to store together with combustible or self-igniting materials or any highly flammable solids. Peroxides may form her produce is exposed to light and air urther details voltatilly coplosive mixture may form within partially empty containers. For outdoor storage: Use only equipment proved for use in 1 zone. For indoor storage: Use only equipment approved for use in 2 zone orage class: 3 = Flammable liquids 3 Specific end use(s) 10 entro 11 Control parameters Very Weight Main Market Structure materials 10 mg/min Stop pan 10 mg/min Stop pan				
voide adequate ventilation, and local exhaust as needed. voide room air exhaust at ground level. Concentrated vapours are heavier than air. Avoid the formation of aerosol. o not breathe vapours. Avoid contact with skin and eyes. Wear protective equipment. see only explosion-protected equipment/instruments. Do not use air pressure: recardious against fire and explosion reparatures exceeding 50°C will increase pressure: resulting in danger of bursting or explosion. Keep yay from sources of ignition – No smoking: Take precautionary measures against static discharges. Beware of ignition. Potentially explosive mixture may form within partially empty containers. Emergency cooling must be ovided for in case of a fire in the vicinity. Do not weld 2 Conditions for safe storage, including any incompatibilities equirements for sforerooms and containers eco container (eght) closed in a cool, well-ventilated place. Protect from direct sunlight. eed, statiles storage, and durinim are stable container materials. Copper may be attacked. naturable container/equipment material: May attack plastics. lake sure spills can be contained, e.g. in sump pallets or kerbed areas. Due to danger of explosion, prevent leakage o pours into cellars, flues and ditches. ints on joint storage not store together with combustible or self-igniting materials or any highly flammable solids. Peroxides may form hen product is exposed to light and air urther details Solid end use(s) Solid CONTROLS/PERSONAL PROTECTION 1 Control parameters  pe         Lone for a loco. For indoor storage: Use only equipment approved for use in 2 zone orage class; 3 = Flammable liquids 3 Sopeiff end use(s) Solyent  NMDEL's  NMDEL'		ndling		
ovide room air exhaust at ground level. Concentrated vapours are heavier than air. Avoid the formation of aerosol. on orb breach exposurs. Avoid contact with skin and eyes. Wear protective equipment. se only explosion-protected equipment/instruments. Do not use air pressure: recautions against fire and explosion protective protective equipment instruct may form within partially empty containers. Emergency cooling must be voided for in case of a fire in the vicinity. Do not weld 2 Conditions for safe storage, including any incompatibilities equirements for storerooms and containers equipments for storerooms and containers equipment material. May attack plastics. alse sure spills can be contained, e.g. in sump palets or kerbed areas. Due to danger of explosion, prevent leakage o porus into cellars, flues and ditches. ints o joint storage o not store together with combustible or self-igniting materials or any highly flammable solids. Peroxides may floe hear how the technic containers equipment approved for use in 2 zone orage class: 3 = Flammable liquids 3 Specific end use(s) livent Limit Value more, IOLV: WA at Britan: WELTWA at Britan: WELTWA		and local axhaust as needed		
o not breathe vapours. Avoid contact with skin and eyes. Wear protective equipment. se only explosion-protected equipment/instruments. Do not use air pressure. recautions against fire and explosion Argo from sources of gaintion – No smoking. Take precautionary measures against static discharges. Beware of ignition. Potentially explosive mixture may form within partially empty containers. Emergency cooling must be ovided for in case of a fire in the vicinity. Do not weld 2 Conditions for safe storage, including any incompatibilities equirements for storerooms and containers eep container dry. Keep container tightly closed in a cool, well-ventilated place. Protect from direct sunlight. ecd, stainless steel, and aluminium are stable container materials. Copper may be attacked. nasitable container/equipment material: May attack plastics. lake sure spills can be contained, e.g. in sump pallets or kerbed areas. Due to danger of explosion, prevent leakage o popurs into cellster, with combustible or self-igniting materials or any highly flammable solids. Peroxides may form hen product is exposed to light and air urther details votanially explosive mixture may form within partially empty containers. For outdoor storage: Use only equipment proved for use in 1 zone. For indoor storage: Use only equipment approved for use in 2 zone orage class: 3 – Flammable lightly 3 Specific end use(s) bytent EXPOSURE CONTROLS/PERSONAL PROTECTION 1 Control parameters ype ype ype ype ype ype ype ype			nours are beaujer than air	Avoid the formation of aerosol
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Ontains no substances with occupational exposure limits         N(M)EL/PNEC         N(M)EL's         nd User       Exposure Time       Route of entry       Value         /orkers       Long term       Dermal       186 mg/kg bw/d         /orkers       Short term       Inhalative       2420 mg/m <sup>3</sup> /orkers       Long term       Oral       62 mg/kg bw/d         onsumers       Long term       Oral       62 mg/kg bw/d         onsumers       Long term       Dermal       62 mg/kg bw/d         onsumers       Long term       Inhalative       200 mg/m3         redicted No Effect Concentrations (PNEC):       NEC water (freshwater) = 10.6 mg/l       NEC sediment(freshwater) = 30.4 mg/kg dwt         NEC sediment(freshwater) = 30.4 mg/kg dwt       NEC sediment (marine water) = 3.04 mg/kg dwt       NEC sediment plant = 100 mg/l         2 Exposure controls       Isoson p	Breat Britain: WEL-TWA			
N(M)EL's         Exposure Time         Route of entry         Value           /orkers         Long term         Dermal         186 mg/kg bw/d           /orkers         Short term         Inhalative         2420 mg/m <sup>3</sup> /orkers         Long term         Inhalative         2420 mg/m <sup>3</sup> /orkers         Long term         Oral         62 mg/kg bw/d           onsumers         Long term         Dermal         62 mg/kg bw/d           onsumers         Long term         Dermal         62 mg/kg bw/d           onsumers         Long term         Dermal         62 mg/kg bw/d           onsumers         Long term         Inhalative         200 mg/m <sup>3</sup> redicted No Effect Concentrations (PNEC):         NEC water (freshwater) = 10.6 mg/l         NEC water (marine water) = 1.06 mg/l           NEC water (marine water) = 3.04 mg/kg dwt         NEC sediment (freshwater) = 3.04 mg/kg dwt         NEC sediment (marine water) = 3.04 mg/kg dwt           NEC sediment (marine water) = 3.04 mg/kg dwt         NEC sewage treatment plant = 100 mg/l         2           2 Exposure controls         xplosion protection required. Provide good ventilation and/or an exhaust system in the work area         ccupational exposure controls           11 information for relevant exposure scenarios including operation conditions and risk management measures a sted in	Great Britain: WEL-TWA Great Britain: WEL-STEL		3620 mg/m <sup>3</sup> ; 1500 ppm 1210 mg/m <sup>3</sup> : 500 ppm IOEL	V
nd UserExposure TimeRoute of entryValueVorkersLong termDermal186 mg/kg bw/dVorkersShort termInhalative2420 mg/m³VorkersLong termInhalative1210 mg/m³onsumersLong termOral62 mg/kg bw/donsumersLong termDermal62 mg/kg bw/donsumersLong termDermal62 mg/kg bw/donsumersLong termDermal62 mg/kg bw/donsumersLong termInhalative200 mg/m³redicted No Effect Concentrations (PNEC):NEC water (freshwater) = 10.6 mg/lNEC water (marine water) = 1.06 mg/lNEC water (intermittent release) = 21 mg/lNEC sediment (freshwater) = 30.4 mg/kg dwtNEC sediment (marine water) = 3.04 mg/kg dwtNEC sediment (marine water) = 3.04 mg/kg dwtNEC sewage treatment plant = 100 mg/l22 Exposure controlsxplosion protection required. Provide good ventilation and/or an exhaust system in the work areaccupational exposure controlsIl information for relevant exposure scenarios including operation conditions and risk management measures a sted in 'Annex II: Worker Exposure and Risk Assessment'espiratory protection	Great Britain: WEL-TWA Great Britain: WEL-STEL reland: 8 hours	occupational exposure limits	3620 mg/m <sup>3</sup> ; 1500 ppm 1210 mg/m <sup>3</sup> ; 500 ppm IOEL	V
Vorkers       Long term       Dermal       186 mg/kg bw/d         Vorkers       Short term       Inhalative       2420 mg/m <sup>3</sup> Vorkers       Long term       Inhalative       1210 mg/m <sup>3</sup> onsumers       Long term       Oral       62 mg/kg bw/d         onsumers       Long term       Dermal       62 mg/kg bw/d         onsumers       Long term       Dermal       62 mg/kg bw/d         onsumers       Long term       Inhalative       200 mg/m <sup>3</sup> redicted No Effect Concentrations (PNEC):       NEC water (freshwater) = 10.6 mg/l       NEC water (intermittent release) = 21 mg/l         NEC water (intermittent release) = 21 mg/l       NEC sediment (freshwater) = 30.4 mg/kg dwt       NEC sediment (marine water) = 3.04 mg/kg dwt         NEC sediment (marine water) = 3.04 mg/kg dwt       NEC sewage treatment plant = 100 mg/l       2         2 Exposure controls       xplosion protection required. Provide good ventilation and/or an exhaust system in the work area         ccupational exposure controls       I       Information for relevant exposure scenarios including operation conditions and risk management measures a sted in 'Annex II: Worker Exposure and Risk Assessment'         espiratory protection       Exposure controls	Great Britain: WEL-TWA Great Britain: WEL-STEL reland: 8 hours	occupational exposure limits	3620 mg/m <sup>3</sup> ; 1500 ppm 1210 mg/m <sup>3</sup> ; 500 ppm IOEL	V
Forkers       Short term       Inhalative       2420 mg/m <sup>3</sup> Vorkers       Long term       Inhalative       1210 mg/m <sup>3</sup> onsumers       Long term       Oral       62 mg/kg bw/d         onsumers       Long term       Dermal       62 mg/kg bw/d         onsumers       Long term       Inhalative       200 mg/m <sup>3</sup> redicted No Effect Concentrations (PNEC):       NEC water (freshwater) = 10.6 mg/l       200 mg/m <sup>3</sup> NEC water (freshwater) = 10.6 mg/l       NEC water (intermittent release) = 21 mg/l       NEC sediment(freshwater) = 30.4 mg/kg dwt         NEC sediment (freshwater) = 30.4 mg/kg dwt       NEC sediment (marine water) = 3.04 mg/kg dwt       NEC sediment plant = 100 mg/l         2 Exposure controls       Exposure controls       Reposure controls         xplosion protection required. Provide good ventilation and/or an exhaust system in the work area       ccupational exposure controls         Il information for relevant exposure scenarios including operation conditions and risk management measures a sted in 'Annex II: Worker Exposure and Risk Assessment'       espiratory protection	Great Britain: WEL-TWA Great Britain: WEL-STEL reland: 8 hours Contains no substances with DN(M)EL/PNEC DN(M)EL's	-	1210 mg/m <sup>3</sup> ; 500 ppm IOEL	V
Torkers       Long term       Inhalative       1210 mg/m <sup>3</sup> onsumers       Long term       Oral       62 mg/kg bw/d         onsumers       Long term       Dermal       62 mg/kg bw/d         onsumers       Long term       Inhalative       200 mg/m <sup>3</sup> redicted No Effect Concentrations (PNEC):       Inhalative       200 mg/m <sup>3</sup> NEC water (freshwater) =       10.6 mg/l       NEC water (marine water) =       1.06 mg/l         NEC water (intermittent release) = 21 mg/l       NEC sediment (freshwater) =       30.4 mg/kg dwt         NEC sediment (marine water) =       3.04 mg/kg dwt       NEC soil =       33.3 mg/kg dwt         NEC sediment (marine water) =       3.04 mg/kg dwt       NEC sevage treatment plant =       100 mg/l         2 Exposure controls       Exposure controls       Exposure controls       Il information for relevant exposure scenarios including operation conditions and risk management measures a sted in 'Annex II: Worker Exposure and Risk Assessment'       espiratory protection	reat Britain: WEL-TWA reat Britain: WEL-STEL eland: 8 hours Contains no substances with DN(M)EL/PNEC DN(M)EL's Cnd User	Exposure Time	1210 mg/m <sup>3</sup> ; 500 ppm IOEL	Value
onsumers       Long term       Oral       62 mg/kg bw/d         onsumers       Long term       Dermal       62 mg/kg bw/d         onsumers       Long term       Inhalative       200 mg/m <sup>3</sup> redicted No Effect Concentrations (PNEC):       NEC water (freshwater) = 10.6 mg/l       200 mg/m <sup>3</sup> NEC water (marine water) = 1.06 mg/l       NEC water (intermittent release) = 21 mg/l       NEC sediment(freshwater) = 30.4 mg/kg dwt         NEC sediment (marine water) = 3.04 mg/kg dwt       NEC soli = 33.3 mg/kg dwt       NEC sediment plant = 100 mg/l         2 Exposure controls       xplosion protection required. Provide good ventilation and/or an exhaust system in the work area       ccupational exposure controls         Il information for relevant exposure scenarios including operation conditions and risk management measures a sted in 'Annex II: Worker Exposure and Risk Assessment'       espiratory protection	reat Britain: WEL-TWA reat Britain: WEL-STEL eland: 8 hours contains no substances with N(M)EL/PNEC N(M)EL's chd User Vorkers	Exposure Time Long term	1210 mg/m <sup>3</sup> ; 500 ppm IOEL Route of entry Dermal	Value 186 mg/kg bw/d
onsumers       Long term       Dermal       62 mg/kg bw/d         onsumers       Long term       Inhalative       200 mg/m <sup>3</sup> redicted No Effect Concentrations (PNEC):       NEC water (freshwater) = 10.6 mg/l       NEC water (marine water) = 1.06 mg/l         NEC water (intermittent release) = 21 mg/l       NEC sediment(freshwater) = 30.4 mg/kg dwt       NEC sediment (marine water) = 3.04 mg/kg dwt         NEC soil = 33.3 mg/kg dwt       NEC sewage treatment plant = 100 mg/l       2         2 Exposure controls       xplosion protection required. Provide good ventilation and/or an exhaust system in the work area         ccupational exposure controls       Il information for relevant exposure scenarios including operation conditions and risk management measures a sted in 'Annex II: Worker Exposure and Risk Assessment'	areat Britain: WEL-TWA areat Britain: WEL-STEL eland: 8 hours contains no substances with <b>DN(M)EL/PNEC</b> <b>DN(M)EL'S</b> <b>Cond User</b> Vorkers Vorkers	Exposure Time Long term Short term	1210 mg/m³; 500 ppm IOEL         Route of entry         Dermal         Inhalative	Value           186 mg/kg bw/d           2420 mg/m³
Onsumers       Long term       Inhalative       200 mg/m <sup>3</sup> redicted No Effect Concentrations (PNEC):       NEC water (freshwater) = 10.6 mg/l       NEC water (marine water) = 1.06 mg/l         NEC water (marine water) = 1.06 mg/l       NEC water (intermittent release) = 21 mg/l       NEC sediment(freshwater) = 30.4 mg/kg dwt         NEC sediment (marine water) = 3.04 mg/kg dwt       NEC sediment (marine water) = 3.04 mg/kg dwt       NEC sediment plant = 100 mg/l         2 Exposure controls       xplosion protection required. Provide good ventilation and/or an exhaust system in the work area       ccupational exposure controls         Il information for relevant exposure scenarios including operation conditions and risk management measures a sted in 'Annex II: Worker Exposure and Risk Assessment'       espiratory protection	areat Britain: WEL-TWA areat Britain: WEL-STEL eland: 8 hours Contains no substances with DN(M)EL/PNEC DN(M)EL's Cnd User Vorkers Vorkers Vorkers Vorkers	Exposure Time Long term Short term Long term	1210 mg/m³; 500 ppm IOEL         Route of entry         Dermal         Inhalative         Inhalative	Value           186 mg/kg bw/d           2420 mg/m <sup>3</sup> 1210 mg/m <sup>3</sup>
redicted No Effect Concentrations (PNEC): NEC water (freshwater) = 10.6 mg/l NEC water (marine water) = 1.06 mg/l NEC water (intermittent release) = 21 mg/l NEC sediment(freshwater) = 30.4 mg/kg dwt NEC sediment (marine water) = 3.04 mg/kg dwt NEC soil = 33.3 mg/kg dwt NEC sewage treatment plant = 100 mg/l <b>2 Exposure controls</b> xplosion protection required. Provide good ventilation and/or an exhaust system in the work area ccupational exposure controls Il information for relevant exposure scenarios including operation conditions and risk management measures a sted in 'Annex II: Worker Exposure and Risk Assessment' espiratory protection	areat Britain: WEL-TWA areat Britain: WEL-STEL reland: 8 hours Contains no substances with DN(M)EL/PNEC DN(M)EL's Cnd User Vorkers Vorkers Vorkers Consumers	Exposure Time Long term Short term Long term Long term	1210 mg/m³; 500 ppm IOEL         Route of entry         Dermal         Inhalative         Inhalative         Oral	Value           186 mg/kg bw/d           2420 mg/m³           1210 mg/m³           62 mg/kg bw/d
NEC water (freshwater) = 10.6 mg/l NEC water (marine water) = 1.06 mg/l NEC water (intermittent release) = 21 mg/l NEC sediment(freshwater) = 30.4 mg/kg dwt NEC sediment (marine water) = 3.04 mg/kg dwt NEC soil = 33.3 mg/kg dwt NEC sewage treatment plant = 100 mg/l 2 Exposure controls xplosion protection required. Provide good ventilation and/or an exhaust system in the work area ccupational exposure controls Il information for relevant exposure scenarios including operation conditions and risk management measures a sted in 'Annex II: Worker Exposure and Risk Assessment' espiratory protection	reat Britain: WEL-TWA reat Britain: WEL-STEL eland: 8 hours Contains no substances with DN(M)EL/PNEC DN(M)EL'S Cnd User Vorkers Vorkers Vorkers Consumers Consumers	Exposure Time         Long term         Short term         Long term         Long term         Long term         Long term	1210 mg/m³; 500 ppm IOEL         Route of entry         Dermal         Inhalative         Inhalative         Oral         Dermal	Value           186 mg/kg bw/d           2420 mg/m <sup>3</sup> 1210 mg/m <sup>3</sup> 62 mg/kg bw/d           62 mg/kg bw/d
NEC water (marine water) = 1.06 mg/l NEC water (intermittent release) = 21 mg/l NEC sediment(freshwater) = 30.4 mg/kg dwt NEC sediment (marine water) = 3.04 mg/kg dwt NEC soil = 33.3 mg/kg dwt NEC sewage treatment plant = 100 mg/l <b>2 Exposure controls</b> xplosion protection required. Provide good ventilation and/or an exhaust system in the work area <b>ccupational exposure controls</b> Il information for relevant exposure scenarios including operation conditions and risk management measures a sted in 'Annex II: Worker Exposure and Risk Assessment' <b>espiratory protection</b>	ireat Britain: WEL-TWA Great Britain: WEL-STEL reland: 8 hours Contains no substances with DN(M)EL/PNEC DN(M)EL'S Cnd User Vorkers Vorkers Vorkers Consumers Consumers Consumers Consumers	Exposure Time         Long term	1210 mg/m³; 500 ppm IOEL         Route of entry         Dermal         Inhalative         Inhalative         Oral         Dermal	Value           186 mg/kg bw/d           2420 mg/m <sup>3</sup> 1210 mg/m <sup>3</sup> 62 mg/kg bw/d           62 mg/kg bw/d
NEC water (intermittent release) = 21 mg/l NEC sediment(freshwater) = 30.4 mg/kg dwt NEC sediment (marine water) = 3.04 mg/kg dwt NEC soil = 33.3 mg/kg dwt NEC sewage treatment plant = 100 mg/l <b>2 Exposure controls</b> xplosion protection required. Provide good ventilation and/or an exhaust system in the work area ccupational exposure controls Il information for relevant exposure scenarios including operation conditions and risk management measures a sted in 'Annex II: Worker Exposure and Risk Assessment' espiratory protection	areat Britain: WEL-TWA areat Britain: WEL-STEL eland: 8 hours Contains no substances with DN(M)EL/PNEC DN(M)EL'S Cnd User Vorkers Vorkers Vorkers Consumers Consumers Consumers Consumers Consumers Consumers Consumers	Exposure Time         Long term         Short term         Long term         Long term         Long term         Long term         Intrations (PNEC):	1210 mg/m³; 500 ppm IOEL         Route of entry         Dermal         Inhalative         Inhalative         Oral         Dermal	Value           186 mg/kg bw/d           2420 mg/m <sup>3</sup> 1210 mg/m <sup>3</sup> 62 mg/kg bw/d           62 mg/kg bw/d
NEC sediment(freshwater) = 30.4 mg/kg dwt NEC sediment (marine water) = 3.04 mg/kg dwt NEC soil = 33.3 mg/kg dwt NEC sewage treatment plant = 100 mg/l <b>2 Exposure controls</b> xplosion protection required. Provide good ventilation and/or an exhaust system in the work area ccupational exposure controls Il information for relevant exposure scenarios including operation conditions and risk management measures a sted in 'Annex II: Worker Exposure and Risk Assessment' espiratory protection	ireat Britain: WEL-TWA ireat Britain: WEL-STEL eland: 8 hours Contains no substances with DN(M)EL/PNEC DN(M)EL's Cnd User Vorkers Vorkers Vorkers Consumers Consumers Consumers Consumers Predicted No Effect Concer PNEC water (freshwater) =	Exposure Time         Long term         Short term         Long term         Long term         Long term         Intrations (PNEC):         10.6 mg/l	1210 mg/m³; 500 ppm IOEL         Route of entry         Dermal         Inhalative         Inhalative         Oral         Dermal	Value           186 mg/kg bw/d           2420 mg/m <sup>3</sup> 1210 mg/m <sup>3</sup> 62 mg/kg bw/d           62 mg/kg bw/d
NEC sediment (marine water) = 3.04 mg/kg dwt NEC soil = 33.3 mg/kg dwt NEC sewage treatment plant = 100 mg/l 2 Exposure controls xplosion protection required. Provide good ventilation and/or an exhaust system in the work area ccupational exposure controls Il information for relevant exposure scenarios including operation conditions and risk management measures a sted in 'Annex II: Worker Exposure and Risk Assessment' espiratory protection	ireat Britain: WEL-TWA ireat Britain: WEL-STEL eland: 8 hours Contains no substances with DN(M)EL/PNEC DN(M)EL'S Cnd User Vorkers Vorkers Vorkers Consumers Consumers Consumers Consumers Predicted No Effect Concer PNEC water (freshwater) = PNEC water (marine water)	Exposure Time         Long term         Short term         Long term         Long term         Long term         Iong term         Iong term         10.6 mg/l         = 1.06 mg/l	1210 mg/m³; 500 ppm IOEL         Route of entry         Dermal         Inhalative         Inhalative         Oral         Dermal	Value           186 mg/kg bw/d           2420 mg/m <sup>3</sup> 1210 mg/m <sup>3</sup> 62 mg/kg bw/d           62 mg/kg bw/d
NEC soil = 33.3 mg/kg dwt NEC sewage treatment plant = 100 mg/l 2 Exposure controls xplosion protection required. Provide good ventilation and/or an exhaust system in the work area ccupational exposure controls Il information for relevant exposure scenarios including operation conditions and risk management measures a sted in 'Annex II: Worker Exposure and Risk Assessment' espiratory protection	ireat Britain: WEL-TWA ireat Britain: WEL-STEL eland: 8 hours Contains no substances with DN(M)EL/PNEC DN(M)EL's Cnd User Vorkers Vorkers Vorkers Consumers Consumers Consumers Consumers Predicted No Effect Concer PNEC water (freshwater) = PNEC water (marine water) PNEC water (intermittent rel	Exposure Time         Long term         Short term         Long term         Long term         Long term         Long term         10.6 mg/l         = 1.06 mg/l         lease) = 21 mg/l	1210 mg/m³; 500 ppm IOEL         Route of entry         Dermal         Inhalative         Inhalative         Oral         Dermal	Value           186 mg/kg bw/d           2420 mg/m <sup>3</sup> 1210 mg/m <sup>3</sup> 62 mg/kg bw/d           62 mg/kg bw/d
2 Exposure controls xplosion protection required. Provide good ventilation and/or an exhaust system in the work area ccupational exposure controls Il information for relevant exposure scenarios including operation conditions and risk management measures a sted in 'Annex II: Worker Exposure and Risk Assessment' espiratory protection	areat Britain: WEL-TWA areat Britain: WEL-STEL eland: 8 hours Contains no substances with DN(M)EL/PNEC DN(M)EL'S Cnd User Vorkers Vorkers Vorkers Vorkers Consumers Consumers Consumers Consumers Consumers Predicted No Effect Concer PNEC water (freshwater) = PNEC water (intermittent rel PNEC water (intermittent rel PNEC sediment(freshwater)	Exposure Time         Long term         Short term         Long term         Long term         Long term         Long term         10ng term         10.6 mg/l         = 1.06 mg/l         lease) = 21 mg/l         = 30.4 mg/kg dwt	1210 mg/m³; 500 ppm IOEL         Route of entry         Dermal         Inhalative         Inhalative         Oral         Dermal	Value           186 mg/kg bw/d           2420 mg/m <sup>3</sup> 1210 mg/m <sup>3</sup> 62 mg/kg bw/d           62 mg/kg bw/d
xplosion protection required. Provide good ventilation and/or an exhaust system in the work area ccupational exposure controls Il information for relevant exposure scenarios including operation conditions and risk management measures a sted in 'Annex II: Worker Exposure and Risk Assessment' espiratory protection	areat Britain: WEL-TWA areat Britain: WEL-STEL eland: 8 hours Contains no substances with DN(M)EL/PNEC DN(M)EL'S Cnd User Vorkers Vorkers Vorkers Vorkers Consumers	Exposure Time         Long term         Short term         Long term         Long term         Long term         Long term         10ng term         10.6 mg/l         = 1.06 mg/l         lease) = 21 mg/l         = 30.4 mg/kg dwt         er) = 3.04 mg/kg dwt	1210 mg/m³; 500 ppm IOEL         Route of entry         Dermal         Inhalative         Inhalative         Oral         Dermal	Value           186 mg/kg bw/d           2420 mg/m <sup>3</sup> 1210 mg/m <sup>3</sup> 62 mg/kg bw/d           62 mg/kg bw/d
ccupational exposure controls Il information for relevant exposure scenarios including operation conditions and risk management measures a sted in 'Annex II: Worker Exposure and Risk Assessment' espiratory protection	reat Britain: WEL-TWA reat Britain: WEL-STEL eland: 8 hours Contains no substances with N(M)EL/PNEC DN(M)EL'S Cond User Vorkers Vorkers Vorkers Vorkers Consumers Cons	Exposure Time         Long term         Short term         Long term         Long term         Long term         Iong term         Iong term         Intrations (PNEC):         10.6 mg/l         = 1.06 mg/l         lease) = 21 mg/l         = 30.4 mg/kg dwt         er) = 3.04 mg/kg dwt         wt	1210 mg/m³; 500 ppm IOEL         Route of entry         Dermal         Inhalative         Inhalative         Oral         Dermal	Value           186 mg/kg bw/d           2420 mg/m <sup>3</sup> 1210 mg/m <sup>3</sup> 62 mg/kg bw/d           62 mg/kg bw/d
Il information for relevant exposure scenarios including operation conditions and risk management measures a sted in 'Annex II: Worker Exposure and Risk Assessment' espiratory protection	ireat Britain: WEL-TWA ireat Britain: WEL-STEL eland: 8 hours Contains no substances with DN(M)EL/PNEC DN(M)EL's Cnd User Vorkers Vorkers Vorkers Vorkers Consumers Co	Exposure TimeLong termShort termLong termLong termLong termIong termntrations (PNEC):10.6 mg/l= 1.06 mg/llease) = 21 mg/l= 30.4 mg/kg dwter) = 3.04 mg/kg dwtvtnt = 100 mg/l	Route of entry         Dermal         Inhalative         Oral         Dermal         Inhalative	Value           186 mg/kg bw/d           2420 mg/m³           1210 mg/m³           62 mg/kg bw/d           62 mg/kg bw/d           200 mg/m³
sted in 'Annex II: Worker Exposure and Risk Assessment' espiratory protection	Great Britain: WEL-TWA Great Britain: WEL-STEL reland: 8 hours Contains no substances with DN(M)EL/PNEC DN(M)EL's End User Vorkers Vorkers Vorkers Consumers Consumers Consumers Consumers Consumers Predicted No Effect Concer PNEC water (freshwater) = PNEC water (freshwater) = PNEC water (intermittent rel PNEC water (intermittent rel PNEC water (intermittent rel PNEC sediment (freshwater) PNEC sediment (freshwater) PNEC sediment (marine water) PNEC	Exposure TimeLong termShort termLong termLong termLong termLong termntrations (PNEC):10.6 mg/l= 1.06 mg/llease) = 21 mg/l= 30.4 mg/kg dwter) = 3.04 mg/kg dwtwtnt = 100 mg/ld. Provide good ventilation a	Route of entry         Dermal         Inhalative         Oral         Dermal         Inhalative	Value           186 mg/kg bw/d           2420 mg/m³           1210 mg/m³           62 mg/kg bw/d           62 mg/kg bw/d           200 mg/m³
espiratory protection	Great Britain: WEL-TWA Great Britain: WEL-STEL reland: 8 hours Contains no substances with DN(M)EL/PNEC DN(M)EL's End User Vorkers Vorkers Vorkers Vorkers Consumers Consumers Consumers Consumers Consumers Predicted No Effect Concer PNEC water (freshwater) = PNEC water (freshwater) = PNEC water (intermittent rel PNEC water (intermittent rel PNEC water (intermittent rel PNEC sediment (freshwater) PNEC sediment (marine water) PNEC sewage treatment plan 3.2 Exposure controls Explosion protection require Occupational exposure con	Exposure Time         Long term         Short term         Long term         Long term         Long term         Iterstore         10.6 mg/l         = 1.06 mg/l         lease) = 21 mg/l         = 30.4 mg/kg dwt         er) = 3.04 mg/kg dwt         wt         nt = 100 mg/l         d. Provide good ventilation a         ttrols	Route of entry         Dermal         Inhalative         Inhalative         Oral         Dermal         Inhalative         Oral         Dermal         Inhalative         oral         Dermal         Inhalative	Value           186 mg/kg bw/d           2420 mg/m³           1210 mg/m³           62 mg/kg bw/d           62 mg/kg bw/d           200 mg/m³
	ireat Britain: WEL-TWA ireat Britain: WEL-STEL reland: 8 hours Contains no substances with DN(M)EL/PNEC DN(M)EL's End User Vorkers Vorkers Vorkers Vorkers Consumers Consumers Consumers Consumers Consumers Predicted No Effect Concer PNEC water (freshwater) = PNEC water (marine water) PNEC water (intermittent rel PNEC water (intermittent rel PNEC sediment (marine water) PNEC sediment (marine water) PNE	Exposure Time         Long term         Short term         Long term         Long term         Long term         Long term         ntrations (PNEC):         10.6 mg/l         = 1.06 mg/l         lease) = 21 mg/l         = 30.4 mg/kg dwt         er) = 3.04 mg/kg dwt         wt         nt = 100 mg/l         d. Provide good ventilation a         ntrols         t exposure scenarios includin	Route of entry         Dermal         Inhalative         Inhalative         Oral         Dermal         Inhalative         oral         Inhalative         inhalative         oral         oral         inhalative         inhalative         oral         oral         inhalative         inhalative         inhalative         inhalative         inhalative         inhalative         inhalative         inhalative         inhalative         inhalative	Value           186 mg/kg bw/d           2420 mg/m³           1210 mg/m³           62 mg/kg bw/d           62 mg/kg bw/d           200 mg/m³
se filter type AX (= against vapours of low boiling organic substances) according to EN 14387. Have a breathin	areat Britain: WEL-TWA areat Britain: WEL-STEL eland: 8 hours Contains no substances with DN(M)EL/PNEC DN(M)EL'S Cond User Vorkers Vorkers Vorkers Vorkers Consumers	Exposure Time         Long term         Short term         Long term         Long term         Long term         Long term         ntrations (PNEC):         10.6 mg/l         = 1.06 mg/l         lease) = 21 mg/l         = 30.4 mg/kg dwt         er) = 3.04 mg/kg dwt         wt         nt = 100 mg/l         d. Provide good ventilation a         ntrols         t exposure scenarios includin	Route of entry         Dermal         Inhalative         Inhalative         Oral         Dermal         Inhalative         oral         Inhalative         inhalative         oral         oral         inhalative         inhalative         oral         oral         inhalative         inhalative         inhalative         inhalative         inhalative         inhalative         inhalative         inhalative         inhalative         inhalative	Value           186 mg/kg bw/d           2420 mg/m³           1210 mg/m³           62 mg/kg bw/d           62 mg/kg bw/d           200 mg/m³



PRODUCT: ACETONE (A	AC) REVISION: 9 DATED: 26/01/17 PAGE 7 OF 11
	circulating air ready for emergencies.
Hand protection	
Protective gloves according to EN 37-	4
Gloves material	
	yer thickness >=0.5mm. Breakthrough time: >480 min
Observe glove manufacturer's instruc	tions concerning penetrability and breakthrough time
Eye protection	
Tightly sealed safety glasses accordin	g to EN 166
Skin protection	•
Use solvent resistant protective clothi	ng
	otective clothing, anti-static safety shoes according to EN 345-347
General protection and hygiene me	
Keep away from heat sources, sparks Avoid contact with skin and eyes. Wh	and open flames. Take precautionary measures against static discharges. nen using do not eat, drink or smoke. Wash hands before breaks and after work.
Have eye wash bottle or eye rinse rea	
safety expert.	e measures as mentioned can only be determined in agreement with a responsible
<b>Consumer exposure controls</b>	
	e scenarios including operational conditions and risk management measures are
listed in 'Annex II: consumer exposur	e and risk assessment'.
Environmental exposure controls	
	e scenarios including operational conditions and risk management measures are
listed in 'Annex III: Environmenta	al Exposure and Risk Assessment and Annex IV: Environmental Exposure
Calculation Tool'.	
9. PHYSICAL AND CHI	EMICAL PROPERTIES
9.1 Information on basic physical a	and chemical properties
Appearance	Liquid
Colour	Colourless, clear
Odour	Sweet aromatic
pH in water solution	at 10 g/l: neutral' 50% in H <sub>2</sub> O: 5 - 6
Boiling point/boiling range	56.05°C
Melting point/melting range	-94.7°C
Flash point	-17°C (c.c.)
Evaporation rate	No data available
Flammability	Highly flammable liquid and vapour
Lower explosion limit	2.50 vol %
Upper explosion limit	14.30 vol %
Vapour pressure	At 20°C: 240 hPa
	At 50°C: 800 hPa
Density	at 20°C: 0.79 g/ml
Solubility	at 20°C: in organic solvents 100%
Water solubility	at 20°C: multimiscible
Partition coefficient n-octanol/water	-0.24 log P(o/w)
i arthon coefficient in-Octanol/ water	
Auto ignition to an and	Bio-accumulation is not to be expected (log $P(o/w) < 1$ )
Auto-ignition temperature	465°C (Inflammation group G1)
Thermal decomposition	None
Viscosity, dynamic	At 20°C: 0.32 mPa*s
Explosive properties	Explosion category 1; Explosion group II A
Oxidising characteristics	Highly flammable liquid and vapour
9.2 Other information	
Ignition temperature	465°C (Inflammation group G1)
Refractive index	At 20°C: 1.358 – 1.359
Additional information	Molar mass: 58.09 g/mol
Dissociation constant	24.2 pKa at 25°C
Evaporation rate	2.0  (ether = 1)
Evaporation rate	5.6 (BuAc = 1)
Saturation concentration at 20°C	550 g/m <sup>3</sup>

DATED: 26/01/17

## PRODUCT: ACETONE (AC) REVISION: 9

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

Acetone reacts in presence of bases. Vapours form potentially explosive mixtures with air. Heavier than air, they proceed at floor level and may backflash over great distances when ignited. May become electrostatically charged.

### 10.2 Chemical stability

Product is stable under normal storage conditions.

10.3 Possibility of hazardous reactions

## No hazardous reactions known.

## 10.4 Conditions to avoid

Highly flammable. Concentrated vapours are heavier than air. Take precautionary measures against static discharges. Forms explosive mixtures with air, also in empty, uncleaned containers. May produce, when being mixed with chloridised hydrocarbons and exposed to light, strongly irritating chloric acetone.

### 10.5 Incompatible materials

Attacks many plastics and rubbers. On contact with barium hydroxide, sodium hydroxide and many other alkaline materials condensation may occur. Avoid contact with strong oxidizing agents, alkalis and amines.

### 10.6 Hazardous decomposition products

In case of fire may be liberated: Carbon monoxide and carbon dioxide

## 11. TOXICOLOGICAL INFORMATION

## 11.1 Information on toxicological effects

Acute Oral Toxicity

LD50 Rat 5800 mg/kg bw (OECD 401)

### Acute Dermal Toxicity

LD50 Rat >15800 mg/kg bw

## Acute Inhalative Toxicity

## LC50 Rat 76 mg/L/4h

## **Toxicological effects**

Acute toxicity (oral): Based on available data, the classification criteria are not met.

Acute toxicity (dermal): Based on available data, the classification criteria are not met.

Acute toxicity (inhalative): Based on available data, the classification criteria are not met.

Skin corrosion/irritation: Based on available data, the classification criteria are not met. Specific symptoms in animal studies (guinea pig): Does not cause irritation.

Eye damage/irritation: Eye Irrit. 2; H319 = Causes serious eye irritation. Specific symptoms in animal studies (Rabbit): irritant (OECD 405)

Sensitisation to the respiratory tract: Based on available data, the classification criteria are not met.

Skin sensitisation: Based on available data, the classification criteria are not met.

Sensitisation: Specific symptoms in animal studies (guinea pig): not sensitising (OECD 406)

Germ cell mutagenicity/Genotoxicity: Based on available data, the classification criteria are not met.

Not mutagenic in bacterial mutagenicity (OECD 471) Chromosomal aberrations, in-vitro (OECD 473): negative

Gene-mutations mammalian cells, in-vitro (OECD 476): negative

Micronucleus test in-vivo mouse/hamster (non-Guideline): negative

Carcinogenicity: Based on available data, the classification criteria are not met. Not carcinogen at long term exposure (mouse, dermal).

Reproductive toxicity: Based on available data, the classification criteria are not met. Effects on fertility: No impairment of reproductive performance in animal experiments.

Developmental toxicity: None developmental toxicity (inhalation at Rat, Mouse, OECD 414).

Effects on or via lactation: Lack of data.

Specific target organ toxicity (single exposure): STOT SE 3; H336 = May cause drowsiness or dizziness.

Specific target organ toxicity (repeated exposure): Based on available data, the classification criteria are not met.

NOAEL Rat, oral: 900 mg/kg/90d bw/d. NOAEC Rat, inhalative: 22500 mg/m3/8w

Aspiration hazard: Based on available data, the classification criteria are not met.

### Other information

Short term effect: 10000 ppm were well-tolerated. No symptoms did appear after 30 to 60 minutes.

Symptoms

Burning eyes and skin. Fatigue, nausea, Headache, dizziness, unconsciousness.

In case of inhalation: For the development of any overt signs of toxicity in humans, accidental exposures to extremely large amounts of acetone by inhalation of vapour or ingestion of liquid are necessary (e. g. several thousand ppm of acetone vapour).

In case of ingestion: Gastric and intestinal problems.

After contact with skin: Irritant. Repeated exposure may cause skin dryness or cracking, due to defatting properties.



PAGE 8 OF 11

## R

<b>PRODUCT: ACETONE</b> (AC) REVISION: 9	DATED: 26/01/17	<b>PAGE 9 OF 11</b>
No indication for sensitising properties in humans.		
After eye contact: Causes serious eye irritation.		
12. ECOLOGICAL INFORMATION		
12.1 Toxicity		
Aquatic toxicity - Acute effects		
Fish toxicity:	5540	
Freshwater species: 96h LC50 (Oncorhynchus mykiss): Marine species: 96h LC50 (Alburnus alburnus (aburnum		
Invertebrate toxicity:	1)): 11000 mg/1	
Freshwater species: 48h EC50 (Daphnia pulex (water fle	(1 × 2 × 2 × 2 × 2 × 2 × 2 × 2 × 2 × 2 ×	
Marine species: 24h EC50 (Artemisia salina): 2100 mg/l		
Algae toxicity:	-	
Freshwater species: 8h NOEC (Microcystis aeruginosa):	530 mg/l/8 d	
Marine species: 96h NOEC (Prorocentrum minimum): 4		
Bacterial toxicity:		
EC12: (30 min activated sludge; OECD 209): 1000 mg/l	l	
Long term effects		
Long term toxicity to aquatic invertebrates:		
28 day NOEC (Daphnia pulex (water flea); reproduction		
No information on longer term effects of fish and algae a		:
Long term effects on aquatic organisms are not relevant <b>12.2 Persistence and degradability</b>	due to the rapid eminiation	III water
Further details		
Abiotic degradation:		
DT50, 19-114 d (Air, indirect photodegradation by react	ion with OH radicals)	
Abiotic degradation: none (Water, hydrolysis)		
Biodegradation:		
91%/28d (OECD 301B)		
ThOD 84%/5d (BOD5, APHA 219)		
COD: 2.21 gO <sub>2</sub> /g		
Product is readily biodegradable		
Effects on sewage plant:		
In activated sludge: 100%/4d (anaerobic conditions; Wa	rburg Respirometer)	
<b>12.3 Bio accumulative potential</b>	0.17)	
Bioconcentration factor (BCF): 3 (calculated, BCFWIN	v2.17)	
<b>12.4 Mobility in soil</b> Adsorption coefficient soil (Kd): 1.5 L/kg at 20°C		
The soil sorption coefficient indicates that acetone is mo	bile in soil and may be trans	ported by soil water
Volatility:	blie in son and may be trans	ported by son water
Henry constant: 2.929 – 3.070 Pa*m <sup>3</sup> /mol (25°C in wate	r)	
Henry constant: 3.311 Pa*m <sup>3</sup> /mol (25°C marine water)	•)	
Experimentally determined Henry's Law constants indic	ate a moderate volatility from	m water
12.5 Results of PBT and vPvB assessment	*	
This substance does not meet the PBHT/vPvB criteria of	f REACH, annex XIII	
12.6 Other adverse effects		
General information		
Terrestrial toxicity:		
48h LD50 (Eisenia fetida): 0.1 – 1 mg/cm <sup>3</sup>		
48h LD50 (Ambystoma mexicanum): 20000 mg/l		
48h LD50 (Xenopus laevis): 24000 mg/l		
In a study conducted according to OECD Guideline 207 acetone showed a moderate toxicity to Eisenia fetida. In		
Xenopus laevis larvae exposed to acetone under static co		
20,000 mg/l and 24,000 mg/l respectively	munions in covereu giass da	sins showed 4on LC30 values of
Do not allow to enter into ground water, surface water of	r drains	
<b>13. DISPOSAL CONSIDERATIONS</b>		
13.1 Waste treatment methods		
Product		
Waste key number: 070104* =		
Wastes from the manufacture, formulation, supply and u	se (MFSU) of basic organic	chemicals: organic solvents.
	1	0

TENNANTS DISTRIBUTION LIMITED HAZELBOTTOM ROAD, CHEETHAM, MANCHESTER M8 0GR TEL 44(0)161 205 4454 FAX 44(0)161 203 4298

DATED: 26/01/17

**PAGE 10 OF 11** 

### **PRODUCT: ACETONE** (AC) REVISION: 9 Recommendation

Incinerate as hazardous waste according to applicable local, state, and federal regulations. Do not dispose of with household waste

**Contaminated packaging** 

## Recommendation

Dispose of waste according to applicable legislation. Handle contaminated packages in the same way as the substance itself. Non-contaminated packages may be recycled

14. TRANSPORT INFORMATION	
14.1 UN Number	
ADR	1090
IMDG	1090
IATA	1090
14.2 Proper Shipping Name	
ADR	UN 1090, ACETONE
IMDG	ACETONE
IATA	ACETONE
14.3 Transport hazard class	ACETONE
ADR	Class 3, Code: F1
IMDG	Class 3, Code. F1 Class 3, Sub risk -
IATA	Class 3, Sub lisk - Class 3
14.4 Packing group ADR	т
IMDG	
	II
14.5 Environmental	N.
Marine pollutant	No
14.6 Special precautions for users	
Land transport (ADR/RID)	
Warning board	ADR/RID: Kemler number 33, UN number 1090
Hazard label	3
Limited quantities	1L
EQ	E2
Contaminated packaging: Instructions	P001 IBC 02 R001
Special provisions for packing together	MP19
Portable tanks: Instructions	T4
Portable tanks: Special instructions	TP1
Tank coding:	LGBF
Tunnel restriction code:	D/E
Sea Transport (IMDG)	
EmS:	F-E, S-D
Special provisions	-
Limited quantities	1L
EQ	E2
Contaminated packaging: Instructions	P001
Contaminated packaging: Provisions	-
IBC: Instructions	IBC02
IBC: Provisions	-
Tank instructions: IMO	-
Tank instructions: UN	T4
Tank instructions: Provisions	TP1
Stowage and segregation	Category E
Air Transport (IATA)	
Hazard	Flamm. Liquid
EQ	E2
Passenger Ltd Qty	Pack.Instr. Y341 - Max. Net Qty/Pkg. 1 L
Passenger	Pack.Instr. 353 - Max. Net Qty/Pkg. 5 L
Cargo	Pack.Instr. 364 - Max. Net Qty/Pkg. 60 L

<b>PRODUCT: ACETONE</b> (AC) REVISION	N: 9	DATED: 26/01/17	<b>PAGE 11 OF 11</b>
ERG	3H		
14.7 Transport in bulk according to Annex II o	of MAF	RPOL 73/78 and the IBC (	Code
Pollution category: Z			
Vessel type: -			
Product name: Acetone			
15. REGULATORY INFORMATIC	DN		
15.1 Safety, health and environmental regulati	ions/le	gislation specific for the su	ubstance or mixture
National regulations – Great Britain			
Hazchem-Code: •2YE			
No data available			
National regulations - EC member states			
Volatile organic compounds (VOC): 100 % by we	eight =	790 g/l	
15.2 Chemical safety assessment			
For this substance a chemical safety assessment ha	as beer	n carried out	
16. OTHER INFORMATION			
Further remarks			
Literature: REACH Registration Dossier Aceton	ne. P &	z D-REACH Consortium, 2	2010
Source of key data used to compile the data she	eet		
Supplier information			
Modifications from last revision			
The Safety Data Sheet has been revised throughout	it in ac	cordance with current requi	rements
<b>Date:</b> 26/01/17			
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## Exposure scenario 0: Generic exposure scenario (GES): Industrial Processes relevant for Acetone containing products (ES 1 - 11)

## List of use descriptors

Sector of uses [SU]: Application	SU3:	Industrial uses	
Activities and processes:		ric exposure scenario, applies to all contributing exposure scenarios related sure scenario 1 - 11: industrial uses	l to
	ES2 ES3	<ul> <li>Manufacture, processing and distribution of substances and mixtures</li> <li>Use in laboratories</li> <li>Uses in coatings</li> </ul>	
	ES5 ES6	<ul> <li>Use in binders and release agents</li> <li>Rubber production and processing</li> <li>Polymer manufacturing</li> <li>Delymer processing</li> </ul>	
	ES8 ES9 ES10	<ul> <li>Polymer processing</li> <li>Use in cleaning agents</li> <li>Use in oil and gas field drilling and production operations</li> <li>Blowing agents</li> <li>Mining chemicals</li> </ul>	
Contributing Scenarios:		-	Dogo 15
Contributing Scenarios.	1	Use in closed process, no likelihood of exposure General exposures (closed systems) (worker)	Page 15
	2	Use in closed, continuous process with occasional controlled exposure General exposures (closed systems) (worker)	Page 15
	3	Use in closed batch process (synthesis or formulation) General exposures (closed systems) (worker)	Page 16
	4	Use in batch and other process (synthesis) where opportunity for exposure arises	Page 16
	5	Process sampling (open systems) (worker) Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)	Page 17
	6	Mixing operations (open systems) (worker) Calendering operations Calendering (including Banburys) (worker)	Page 17
	7	Industrial spraying Spraying/fogging by machine application (worker)	Page 18
	8	Industrial spraying Spraying/fogging by machine application (worker)	Page 18
	9	Industrial spraying Spraying/fogging by machine application (worker)	Page 18
	10	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities Bulk transfers (worker)	Page 19
	11	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities Bulk transfers (worker)	Page 19
	12	Transfer of substance or preparation into small containers (dedicated filling line, including weighing) Small package filling (worker)	Page 20
	13	Roller application or brushing Rolling, Brushing (worker)	Page 20
	14	Roller application or brushing Equipment cleaning and maintenance (worker)	Page 21

Contributing Scenarios:	15	Use of blow agents in manufacture of foam Foaming (worker)	Page 21
	16	Treatment of articles by dipping and pouring Dipping, immersion and pouring (worker)	Page 22
	17	Production of preparations or articles by tabletting, compression, extrusion, pelletisation (worker)	Page 22
	18	Use in laboratory reagents (small scale) Laboratory activities (worker)	Page 23
	19	Hand-mixing with intimate contact and only PPE available Hand application - Finger paints, pastels (worker)	Page 23

Contributing exposure scenario 1

# Use in closed process, no likelihood of exposure General exposures (closed systems) (worker)

### List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure

### **Exposure prediction**

Exposure estimation and reference to its source: inhalative: 0.01 ppm

dermal: 0.34 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.002 inhalative: 0.00002 dermal: 0.002 all relevant routes: 0.002

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release: Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system. Operational conditions and risk management measures: (closed systems); Process sampling Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

Contributing exposure scenario 2

# Use in closed, continuous process with occasional controlled exposure General exposures (closed systems) (worker)

### List of use descriptors

Process categories [PROC]:

PROC2: Use in closed, continuous process with occasional controlled exposure

### **Exposure prediction**

Exposure estimation and reference to its source: inhalative: 50 ppm dermal: 1.37 mg/kg/d Risk characterisation ratio (RCR): RCR: 0.11 inhalative: 0.10 dermal: 0.01

all relevant routes: 0.11

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.

Operational conditions and risk management measures:

Continuous process, Process sampling

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

Contributing exposure scenario 3

### Use in closed batch process (synthesis or formulation) General exposures (closed systems) (worker)

### List of use descriptors

Process categories [PROC]:

PROC3: Use in closed batch process (synthesis or formulation)

### **Exposure prediction**

Exposure estimation and reference to its source: inhalative: 100 ppm dermal: 0.34 mg/kg/d Risk characterisation ratio (RCR):

RCR: 0.2 inhalative: 0.20 dermal: 0.002 all relevant routes: 0.20

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:
Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.
Operational conditions and risk management measures:
Batch process, Process sampling
Conditions and measures related to personal protection, hygiene and health evaluation:
Use personal protective equipment as required.

Contributing exposure scenario 4

# Use in batch and other process (synthesis) where opportunity for exposure arises Process sampling (open systems) (worker)

### List of use descriptors

Process categories [PROC]:

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

### **Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 100 ppm dermal: 6.86 mg/kg/d Risk characterisation ratio (RCR):

RCR: 0.24 inhalative: 0.20 dermal: 0.04 all relevant routes: 0.24

### **Risk management measures**

Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

### Contributing exposure scenario 5

### Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) Mixing operations (open systems) (worker)

### List of use descriptors Process categories [PROC]:

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

### **Exposure prediction**

Exposure estimation and reference to its source: inhalative: 250 ppm dermal: 13.71 mg/kg/d Risk characterisation ratio (RCR): RCR: 0.57 inhalative: 0.50 dermal: 0.07 all relevant routes: 0.57

### **Risk management measures**

Operational conditions and risk management measures: Batch process, Process sampling Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

Contributing exposure scenario 6

### Calendering operations Calendering (including Banburys) (worker)

### List of use descriptors

Process categories [PROC]: PROC6: Calendering operations

### **Exposure prediction**

Exposure estimation and reference to its source: inhalative: 250 ppm dermal: 27.43 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.65 inhalative: 0.50 dermal: 0.15 all relevant routes: 0.65

### **Risk management measures**

Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required. Contributing exposure scenario 7

### Industrial spraying Spraying/fogging by machine application (worker)

### List of use descriptors

Process categories [PROC]

PROC7: Industrial spraying

### **Exposure prediction**

Exposure estimation and reference to its source: inhalative: 25 ppm (with local exhaust ventilation, efficiency of 95%) dermal: 2.14 mg/kg/d (with local exhaust ventilation, efficiency of 95%) Risk characterisation ratio (RCR): RCR: 0.06 inhalative: 0.05 dermal: 0.01 all relevant routes: 0.06

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release: Ensure material transfers are under containment or extract ventilation. Operational conditions and risk management measures: with local exhaust ventilation Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

### Contributing exposure scenario 8 Industrial spraying Spraying/fogging by machine application (worker)

### List of use descriptors

Process categories [PROC]

PROC7: Industrial spraying

### **Exposure prediction**

Exposure estimation and reference to its source: inhalative: 350 ppm (dilution ventilation effectiveness 30 %) dermal: 42.86 mg/kg/d Risk characterisation ratio (RCR): RCR: 0.93 inhalative: 0.70 dermal: 0.23 all relevant routes: 0.93 **Risk management measures** 

Technical conditions and measures at process level (source) to prevent release: Ensure operation is undertaken outdoors. Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

Contributing exposure scenario 9 Industrial spraying Spraying/fogging by machine application (worker)

### List of use descriptors

Process categories [PROC]

PROC7: Industrial spraying

Exposure estimation and reference to its source: inhalative: 50 ppm (Respiratory protective device, efficiency of 90%) dermal: 42.86 mg/kg/d Risk characterisation ratio (RCR): RCR: 0.33 inhalative: 0.10 dermal: 0.23 all relevant routes: 0.33

### **Risk management measures**

Conditions and measures related to personal protection, hygiene and health evaluation:

Wear a respirator conforming to EN140 with Type A filter or better.

### Contributing exposure scenario 10

## Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities Bulk transfers (worker)

### Buik transfers (worker

## List of use descriptors

Process categories [PROC]:

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

### **Exposure prediction**

Exposure estimation and reference to its source: inhalative: 250 ppm dermal: 13.71 mg/kg/d Risk characterisation ratio (RCR): RCR: 0.57 inhalative: 0.50 dermal: 0.07 all relevant routes: 0.57

### **Risk management measures**

Operational conditions and risk management measures: Non-dedicated facility, transfer from/pouring from containers Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

Contributing exposure scenario 11

## Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities Bulk transfers (worker)

### List of use descriptors

Process categories [PROC]:

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

Exposure estimation and reference to its source: inhalative: 150 ppm dermal: 6.86 mg/kg/d Risk characterisation ratio (RCR): RCR: 0.34 inhalative: 0.30 dermal: 0.037 all relevant routes: 0.34

### **Risk management measures**

Operational conditions and risk management measures: Dedicated facility, transfer from/pouring from containers Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

Contributing exposure scenario 12

Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

### Small package filling (worker)

### List of use descriptors

Process categories [PROC]:

PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

### **Exposure prediction**

Exposure estimation and reference to its source: inhalative: 200 ppm dermal: 6.86 mg/kg/d Risk characterisation ratio (RCR): RCR: 0.44 inhalative: 0.40 dermal: 0.04 all relevant routes: 0.44

### **Risk management measures**

Operational conditions and risk management measures:

Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

Contributing exposure scenario 13 Roller application or brushing Rolling, Brushing (worker)

### List of use descriptors

Process categories [PROC]:

PROC10: Roller application or brushing

Exposure estimation and reference to its source: inhalative: 250 ppm dermal: 27.43 mg/kg/d Risk characterisation ratio (RCR): RCR: 0.65 inhalative: 0.50 dermal: 0.15 all relevant routes: 0.65

### **Risk management measures**

Operational conditions and risk management measures: Or: Equipment cleaning and maintenance Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

### Contributing exposure scenario 14

### Roller application or brushing Equipment cleaning and maintenance (worker)

### List of use descriptors

Process categories [PROC]:

PROC10: Roller application or brushing

### **Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 250 ppm dermal: 27.43 mg/kg/d Risk characterisation ratio (RCR): RCR: 0.65 inhalative: 0.50 dermal: 0.15 all relevant routes: 0.65

### **Risk management measures**

Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

Contributing exposure scenario 15 Use of blow agents in manufacture of foam Foaming (worker)

### List of use descriptors

Process categories [PROC]:

PROC12: Use of blowing agents in manufacture of foam

### **Exposure prediction**

Exposure estimation and reference to its source: inhalative: 100 ppm dermal: 0.34 mg/kg/d Risk characterisation ratio (RCR): RCR: 0.2 inhalative: 0.20 dermal: 0.00 all relevant routes: 0.20

### Risk management measures

Operational conditions and risk management measures: Production of foam-based objects Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

Contributing exposure scenario 16 Treatment of articles by dipping and pouring Dipping, immersion and pouring (worker)

### List of use descriptors

Process categories [PROC]

PROC13: Treatment of articles by dipping and pouring

### **Exposure prediction**

Exposure estimation and reference to its source: inhalative: 250 ppm dermal: 13.71 mg/kg/d Risk characterisation ratio (RCR): RCR: 0.57 inhalative: 0.50 dermal: 0.074 all relevant routes: 0.57

### **Risk management measures**

Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

#### Contributing exposure scenario 17

# Production of preparations or articles by tabletting, compression, extrusion, pelletisation (worker)

### List of use descriptors

Process categories [PROC]:

PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation

### **Exposure prediction**

Exposure estimation and reference to its source: inhalative: 50 ppm dermal: 0.34 mg/kg/d Risk characterisation ratio (RCR): RCR: 0.1 inhalative: 0.10 dermal: 0.00 all relevant routes: 0.10

### **Risk management measures**

Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required. Contributing exposure scenario 18

### Use in laboratory reagents (small scale) Laboratory activities (worker)

### List of use descriptors

Process categories [PROC]:

PROC15: Use as laboratory reagent

### **Exposure prediction**

Exposure estimation and reference to its source: inhalative: 50 ppm dermal: 0.34 mg/kg/d Risk characterisation ratio (RCR): RCR: 0.1 inhalative: 0.10 dermal: 0.00 all relevant routes: 0.10

### **Risk management measures**

Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

### Contributing exposure scenario 19

### Hand-mixing with intimate contact and only PPE available Hand application - Finger paints, pastels (worker)

### List of use descriptors

Process categories [PROC]:

PROC19: Hand-mixing with intimate contact and only PPE available

### Exposure prediction

Exposure estimation and reference to its source: inhalative: 250 ppm dermal: 28.29 mg/kg/d (Gloves, efficiency of 80%) Risk characterisation ratio (RCR): RCR: 0.65 inhalative: 0.50 dermal: 0.15 all relevant routes: 0.65

### **Risk management measures**

Conditions and measures related to personal protection, hygiene and health evaluation: Wear suitable gloves tested to EN374.

## Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website: http://cefic.org/templates/shwPublications.asp?HID=750

## Exposure scenario 1: Manufacture, processing and distribution of substances and mixtures \*

## List of use descriptors

Sector of uses [SU]: Application	SU3: Industrial uses
••	Manufacture, Processing, Composition, Distribution. Includes recycling/recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities. * Examples for processing: use as an intermediate, use as a monomer etc., use as a monomer etc., use for the manufacturing of resins Process categories [PROC] PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC14, PROC15
	Control of worker exposure: See section risk management measures Human Health, Worker exposure and risk assessment: Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website: http://cefic.org/templates/shwPublications.asp?HID=750
	Examples for Environmental release categories [ERC]: ERC1, ERC2, ERC4, ERC6a
	Environment, ECT acetone: Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium: http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol- derivatives-reach-consortium.aspx
	Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Contributing Scenarios:	1 General information Page 25 Applies to all contributing exposure scenarios related to exposure scenario 1: Manufacture, processing and distribution of substances and mixtures (environment)
	2 General information Page 26 Applies to all contributing exposure scenarios related to exposure scenario 1: Manufacture, processing and distribution of substances and mixtures (worker)

Contributing exposure scenario 1

### General information

Applies to all contributing exposure scenarios related to exposure scenario 1: Manufacture, processing and distribution of substances and mixtures (environment)

### List of use descriptors

Environmental release categories [ERC]:

ERC1: Manufacture of substances

ERC2: Formulation of preparations

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)

### **Operational conditions**

Product characteristics: Substance is a unique structure, ketone, readily biodegradable

Amounts used:

Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maxium tonnage/year.

Duration and frequency of use:

360 d/y Other relevant operational conditions:

Indoor/Outdoor use

### **Exposure prediction**

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used. Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR):

ECT Acetone

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used. Typical technical measures are closed systems or scrubbers or charcoal adsorbers. Treat air emission to provide a typical removal efficiency of (%): 90

### **Disposal considerations**

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Contributing exposure scenario 2

### General information

Applies to all contributing exposure scenarios related to exposure scenario 1: Manufacture, processing and distribution of substances and mixtures (worker)

### List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC6: Calendering operations PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation PROC15: Use as laboratory reagent

### **Operational conditions**

Product characteristics: liquid, vapour pressure > 10 kPa Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently).

Duration and frequency of use:

Covers daily exposures up to 8h (unless stated differently).

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

### Exposure prediction

Exposure estimation and reference to its source:

refer to GES No. 0 industrial

Risk characterisation ratio (RCR):

### refer to GES No. 0 industrial

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures: Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

# Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx

## Exposure scenario 2: Use in laboratories

### List of use descriptors

List of use desc		
Sector of uses [SU]: Application	SU3: Industrial uses	
Activities and processes: Remark:	use of the substance within laboratory settings, including material transfers and equipment cleaning Process categories [PROC] PROC10, PROC15 Process Categories (additionally): PROC19	
	Control of worker exposure: See section risk management measures	
	Human Health, Worker exposure and risk assessment: Exposure assessment and method: Shown are the result of the quantitative exposure a risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website: http://cefic.org/templates/shwPublications.asp?HID=750	and
	Examples for Environmental release categories [ERC]: ERC4	
	Environment, ECT acetone: Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables to performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium: http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phero derivatives-reach-consortium.aspx	be
	Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling n be necessary to define appropriate site-specific risk management measures.	nay
Contributing Scenarios:		ige 28
		ige 29
Contributing exposure scenario 1 General information Applies to all contributing exposure scenarios related to exposure scenario 2: Use in laboratories (environment)		
List of use descri	iptors	
Environmental release ca	•	rt of

### **Operational conditions**

	operational contaitions	
	Product characteristics:	Substance is a unique structure, ketone, readily biodegradable
		Amounts used:
		Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone'
		to calculate your maxium tonnage/year.
Duration and frequency of use:		
		360 d/y

Other relevant operational conditions:

Indoor/Outdoor use

### **Exposure prediction**

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used. Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR): ECT Acetone

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used. Typical technical measures are closed systems or scrubbers or charcoal adsorbers. Treat air emission to provide a typical removal efficiency of (%): 90 %

### **Disposal considerations**

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

### Contributing exposure scenario 2 General information Applies to all contributing exposure scenarios related to exposure scenario 2: Use in laboratories (worker)

### List of use descriptors

Process categories [PROC]:

PROC10: Roller application or brushing PROC15: Use as laboratory reagent PROC19: Hand-mixing with intimate contact and only PPE available

### **Operational conditions**

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.)

Duration and frequency of use:

Covers daily exposures up to 8h Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

### **Exposure prediction**

Exposure estimation and reference to its source:

refer to GES No. 0 industrial Risk characterisation ratio (RCR):

refer to GES No. 0 industrial

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

## Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

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### Exposure scenario 3: Uses in coatings List of use descriptors Sector of uses [SU]: SU3: Industrial uses Application Activities and processes: Covers the use in coatings (paints, inks, adhesives, etc), including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, spreader, dip, flow, fluidised bed on production lines and film formation). Remark: Process categories [PROC] PROC5, PROC8a, PROC8b, PROC10, PROC13 Process Categories (additionally): PROC1, PROC2, PROC3, PROC4, PROC7, PROC8b, PROC9, PROC15, PROC19 Control of worker exposure: See section risk management measures Human Health, Worker exposure and risk assessment: Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website: http://cefic.org/templates/shwPublications.asp?HID=750 Examples for Environmental release categories [ERC]: ERC4 Environment, ECT acetone: Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium: http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenolderivatives-reach-consortium.aspx Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Contributing Scenarios: 1 General information Page 31 Applies to all contributing exposure scenarios related to exposure scenario 3: Uses in coatings (environment) 2 General information Page 32 Applies to all contributing exposure scenarios related to exposure scenario 3: Uses in coatings (worker) Contributing exposure scenario 1 **General information**

### coatings (environment) List of use descriptors

Environmental release categories [ERC]:

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

### **Operational conditions**

Product characteristics: Substance is a unique structure, ketone, readily biodegradable

Amounts used:

Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maxium tonnage/year.

Applies to all contributing exposure scenarios related to exposure scenario 3: Uses in

Duration and frequency of use:

360 d/y

Other relevant operational conditions:

Indoor/Outdoor use

### **Exposure prediction**

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used. Please use the 'ECT Acetone' to check your local conditions. Risk characterisation ratio (RCR):

ECT Acetone

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used. Typical technical measures are closed systems or scrubbers or charcoal adsorbers. Treat air emission to provide a typical removal efficiency of (%): 90 %

### **Disposal considerations**

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions. Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

### Contributing exposure scenario 2 General information Applies to all contributing exposure scenarios related to exposure scenario 3: Uses in coatings (worker)

### List of use descriptors

Process categories [PROC]:

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC10: Roller application or brushing

PROC13: Treatment of articles by dipping and pouring

PROC1: Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional controlled exposure

PROC3: Use in closed batch process (synthesis or formulation)

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC7: Industrial spraying

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

PROC15: Use as laboratory reagent

PROC19: Hand-mixing with intimate contact and only PPE available

### **Operational conditions**

Duration and frequency of use:

Covers daily exposures up to 8h

Exposure estimation and reference to its source: refer to GES No. 0 industrial Risk characterisation ratio (RCR):

refer to GES No. 0 industrial

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

## Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

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## Exposure scenario 4: Use in binders and release agents

## List of use descriptors

Sector of uses [SU]: Application	SU3: Industrial uses
Activities and processes: (	Covers the use as binders and release agents including material transfers, mixing, application (including spraying and brushing), mould forming and casting and handling
Remark:	of waste Process categories [PROC] PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13
	Control of worker exposure: See section risk management measures
	Human Health, Worker exposure and risk assessment: Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website: http://cefic.org/templates/shwPublications.asp?HID=750
	Examples for Environmental release categories [ERC]: ERC5
	Environment, ECT acetone: Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium: http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol- derivatives-reach-consortium.aspx
i	Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Contributing Scenarios:	1 General information Page 34 Applies to all contributing exposure scenarios related to exposure
:	scenario 4: Use in binders and release agents (environment) General information Applies to all contributing exposure scenarios related to exposure scenario 4: Use in binders and release agents (worker) Page 35 Page 3

### List of use descriptors

	•	
Environmental release ca	ategories [ERC]: ERC5: Industrial use resulting in inclusion into or onto a matrix	
	Encos. Industrial use resulting in inclusion into or onto a matrix	
Operational conditions		
Product characteristics:	Substance is a unique structure, ketone, readily biodegradable	
	Amounts used: Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maxium tonnage/year.	
Duration and frequency o	f use:	
	360 d/y	

Other relevant operational conditions:

Indoor/Outdoor use

### **Exposure prediction**

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used. Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR): ECT Acetone

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used. Typical technical measures are closed systems or scrubbers or charcoal adsorbers. Treat air emission to provide a typical removal efficiency of (%): 90 %

### **Disposal considerations**

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

### Contributing exposure scenario 2 General information Applies to all contributing exposure scenarios related to exposure scenario 4: Use in binders and release agents (worker)

### List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC6: Calendering operations PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring

### **Operational conditions**

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.) Duration and frequency of use:

Covers daily exposures up to 8h

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

Exposure estimation and reference to its source: refer to GES No. 0 industrial Risk characterisation ratio (RCR):

refer to GES No. 0 industrial

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

## Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

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## Exposure scenario 5: Rubber production and processing

## List of use descriptors

List of use desc	nptors
Sector of uses [SU]: Application	SU3: Industrial uses
Activities and processes Remark:	Manufacture of tyres and general rubber articles, including processing of raw (uncured) rubber, handling and mixing of rubber additives, vulcanising, cooling and finishing. Process categories [PROC]
	PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14
	Control of worker exposure: See section risk management measures
	Human Health, Worker exposure and risk assessment: Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website: http://cefic.org/templates/shwPublications.asp?HID=750
	Examples for Environmental release categories [ERC]: ERC6d
	Environment, ECT acetone: Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium: http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol- derivatives-reach-consortium.aspx
	Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Contributing Scenarios:	1 General information Page 37 Applies to all contributing exposure scenarios related to exposure scenario 5: Rubber production and processing (environment)
	2 General information Page 38 Applies to all contributing exposure scenarios related to exposure scenario 5: Rubber production and processing (worker)
List of use descri	ptors
Environmental release c	
Operational cond	itions
•	Substance is a unique structure, ketone, readily biodegradable
	Amounts used:

	Substance is a unique structure, returne, readily biodegradable
	Amounts used:
	Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone'
	to calculate your maxium tonnage/year.
Duration and frequency of use:	
	360 d/y

Other relevant operational conditions:

Indoor/Outdoor use

### **Exposure prediction**

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used. Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR): ECT Acetone

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used. Typical technical measures are closed systems or scrubbers or charcoal adsorbers. Treat air emission to provide a typical removal efficiency of (%): 90 %

### **Disposal considerations**

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

### Contributing exposure scenario 2 General information Applies to all contributing exposure scenarios related to exposure scenario 5: Rubber production and processing (worker)

### List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC6: Calendering operations PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation

### **Operational conditions**

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.) Duration and frequency of use:

Covers daily exposures up to 8h

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

## **Exposure prediction**

Exposure estimation and reference to its source: refer to GES No. 0 industrial Risk characterisation ratio (RCR):

refer to GES No. 0 industrial

#### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures: Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

# Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx

## Exposure scenario 6: Polymer manufacturing

## List of use descriptors

Sector of uses [SU]: Application	SU3: Industrial uses		
Remark:	Manufacturing of formulated polymers including material transfers, additives handling (e.g. pigments, stabilisers, fillers, plasticisers, etc.), moulding, curing and forming activities, material re-works, storage and associated maintenance Process categories [PROC] PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15		
	Control of worker exposure: See section risk management measures		
	Human Health, Worker exposure and risk assessment: Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website: http://cefic.org/templates/shwPublications.asp?HID=750		
	Examples for Environmental release categories [ERC]: ERC6d		
	Environment, ECT acetone: Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium: http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol- derivatives-reach-consortium.aspx		
	Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.		
Contributing Scenarios:	1 General information Page 4 Applies to all contributing exposure scenarios related to exposure scenario 6: Polymer manufacturing (environment)		
	2 General information Page 4 Applies to all contributing exposure scenarios related to exposure scenario 6: Polymer manufacturing (worker)		

## Contributing exposure scenario 1 General information

# Applies to all contributing exposure scenarios related to exposure scenario 6: Polymer manufacturing (environment)

## List of use descriptors

Environmental release ca	ategories [ERC]: ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers	
Operational cond	itions	
Product characteristics:	Substance is a unique structure, ketone, readily biodegradable	
	Amounts used: Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maxium tonnage/year.	
Duration and frequency of use:		
	360 d/y	

Other relevant operational conditions:

Indoor/Outdoor use

## **Exposure prediction**

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used. Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR): ECT Acetone

#### Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used. Typical technical measures are closed systems or scrubbers or charcoal adsorbers. Treat air emission to provide a typical removal efficiency of (%): 90 %

#### **Disposal considerations**

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

## Contributing exposure scenario 2 General information Applies to all contributing exposure scenarios related to exposure scenario 6: Polymer manufacturing (worker)

## List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC6: Calendering operations PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation PROC15: Use as laboratory reagent

## **Operational conditions**

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.) Duration and frequency of use:

Covers daily exposures up to 8h

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

## **Exposure prediction**

Exposure estimation and reference to its source: refer to GES No. 0 industrial Risk characterisation ratio (RCR):

refer to GES No. 0 industrial

#### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures: Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

## Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx

## Exposure scenario 7: Polymer processing

## List of use descriptors

SU3: Industrial uses
Processing of formulated polymers including incidental exposures during material transfers, additives handling (e.g. pigments, stabilisers, fillers, plasticisers, etc.), moulding, curing and forming activities, material re-works, storage and associated maintenance Process categories [PROC] PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15
Control of worker exposure: See section risk management measures Human Health, Worker exposure and risk assessment: Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website: http://cefic.org/templates/shwPublications.asp?HID=750
Examples for Environmental release categories [ERC]: ERC6d Environment, ECT acetone: Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium: http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol- derivatives-reach-consortium.aspx
Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
1 General information Page 43 Applies to all contributing exposure scenarios related to exposure scenario 7: Polymer processing (environment)
2 General information Page 44 Applies to all contributing exposure scenarios related to exposure scenario 7: Polymer processing (worker)

## Contributing exposure scenario 1

## General information

# Applies to all contributing exposure scenarios related to exposure scenario 7: Polymer processing (environment)

## List of use descriptors

Environmental release categories [ERC]:

ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers

## **Operational conditions**

Product characteristics: Substance is a unique structure, ketone, readily biodegradable

## Amounts used:

Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maxium tonnage/year.

Duration and frequency of use:

360 d/y

Other relevant operational conditions:

Indoor/Outdoor use

## **Exposure prediction**

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used. Please use the 'ECT Acetone' to check your local conditions. Risk characterisation ratio (RCR):

ECT Acetone

## **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used. Typical technical measures are closed systems or scrubbers or charcoal adsorbers. Treat air emission to provide a typical removal efficiency of (%): 90 %

## **Disposal considerations**

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions. Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

## Contributing exposure scenario 2 General information Applies to all contributing exposure scenarios related to exposure scenario 7: Polymer processing (worker)

## List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC6: Calendering operations PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation PROC15: Use as laboratory reagent

## **Operational conditions**

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.)

Duration and frequency of use:

Covers daily exposures up to 8h

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

## **Exposure prediction**

Exposure estimation and reference to its source: refer to GES No. 0 industrial Risk characterisation ratio (RCR): refer to CES No. 0 industrial

refer to GES No. 0 industrial

## **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

# Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

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## Exposure scenario 8: Use in cleaning agents

## List of use descriptors

Sector of uses [SU]:	SU3: Industrial uses				
Application					
Activities and processes: Remark:	Covers the use as a component of cleaning products including transfer from storage, pouring/unloading from drums or containers exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand) related equipment cleaning and maintenance Process categories [PROC] PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC19				
	Control of worker exposure: See section risk management measures				
	Human Health, Worker exposure and risk assessment: Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website: http://cefic.org/templates/shwPublications.asp?HID=750				
	Examples for Environmental release categories [ERC]: ERC4d				
	Environment, ECT acetone: Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium: http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol- derivatives-reach-consortium.aspx				
	Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.				
Contributing Scenarios:	1 General information Page 46 Applies to all contributing exposure scenarios related to exposure scenario 9: Use in cleaning agents (environment)				
	2 General information Page 47 Applies to all contributing exposure scenarios related to exposure scenario 9: Use in cleaning agents (worker)				

## Contributing exposure scenario 1

## General information

# Applies to all contributing exposure scenarios related to exposure scenario 9: Use in cleaning agents (environment)

## List of use descriptors

Environmental release categories [ERC]:

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

## **Operational conditions**

Product characteristics: Substance is a unique structure, ketone, readily biodegradable

## Amounts used:

Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maxium tonnage/year.

Duration and frequency of use:

360 d/y

Other relevant operational conditions:

Indoor/Outdoor use

## **Exposure prediction**

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used. Please use the 'ECT Acetone' to check your local conditions. Risk characterisation ratio (RCR):

ECT Acetone

## **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used. Typical technical measures are closed systems or scrubbers or charcoal adsorbers. Treat air emission to provide a typical removal efficiency of (%): 90 %

## **Disposal considerations**

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions. Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

## Contributing exposure scenario 2 General information Applies to all contributing exposure scenarios related to exposure scenario 9: Use in cleaning agents (worker)

## List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC19: Hand-mixing with intimate contact and only PPE available

## **Operational conditions**

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.) Duration and frequency of use:

Covers daily exposures up to 8h

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

## **Exposure prediction**

Exposure estimation and reference to its source: refer to GES No. 0 industrial Risk characterisation ratio (RCR):

refer to GES No. 0 industrial

#### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures: Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

# Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx

## **Exposure scenario 9:** Use in oil and gas field drilling and production operations

#### List of use descriptors Sector of uses [SU]: SU3: Industrial uses Application Activities and processes: Covers the use as a component of cleaning products including transfer from storage, pouring/unloading from drums or containers Remark: Process categories [PROC] PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b Control of worker exposure: See section risk management measures Human Health, Worker exposure and risk assessment: Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website: http://cefic.org/templates/shwPublications.asp?HID=750 Examples for Environmental release categories [ERC]: ERC4 Environment, ECT acetone: Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium: http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenolderivatives-reach-consortium.aspx Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Contributing Scenarios: 1 General information Applies to all contributing exposure scenarios related to exposure scenario 10: Use in oil and gas field drilling and production operations (environment)

2 General information Page 50 Applies to all contributing exposure scenarios related to exposure scenario 10: Use in oil and gas field drilling and production operations (worker)

Page 49

## Contributing exposure scenario 1

## **General information**

## Applies to all contributing exposure scenarios related to exposure scenario 10: Use in oil and gas field drilling and production operations (environment)

## List of use descriptors

Environmental release categories [ERC]:

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

## **Operational conditions**

Product characteristics: Substance is a unique structure, ketone, readily biodegradable

Amounts used:

Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maxium tonnage/year.

Duration and frequency of use:

360 d/y

Other relevant operational conditions:

Indoor/Outdoor use

## **Exposure prediction**

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used. Please use the 'ECT Acetone' to check your local conditions. Risk characterisation ratio (RCR):

ECT Acetone

## **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used. Typical technical measures are closed systems or scrubbers or charcoal adsorbers. Treat air emission to provide a typical removal efficiency of (%): 90 %

## **Disposal considerations**

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions. Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

## Contributing exposure scenario 2 General information Applies to all contributing exposure scenarios related to exposure scenario 10: Use in oil and gas field drilling and production operations (worker)

## List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

## **Operational conditions**

Product characteristics: liquid, vapour pressure > 10 kPa Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.) Duration and frequency of use:

Covers daily exposures up to 8h

## **Exposure prediction**

Exposure estimation and reference to its source: refer to GES No. 0 industrial Risk characterisation ratio (RCR): refer to GES No. 0 industrial

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

# Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

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#### Exposure scenario 10: Blowing agents List of use descriptors Sector of uses [SU]: SU3: Industrial uses Application Activities and processes: Use as a blowing agent for rigid and flexible foams, including material transfers, mixing and injection, curing, cutting, storage and packing. Remark: Process categories [PROC] PROC1, PROC2, PROC3, PROC8b, PROC9, PROC12 Control of worker exposure: See section risk management measures Human Health, Worker exposure and risk assessment: Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website: http://cefic.org/templates/shwPublications.asp?HID=750 Examples for Environmental release categories [ERC]: ERC4 (ERC10a) Environment, ECT acetone: Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium: http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenolderivatives-reach-consortium.aspx Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Contributing Scenarios: General information Page 52 1 Applies to all contributing exposure scenarios related to exposure scenario 11: Blowing agents (environment) 2 Page 53 General information Applies to all contributing exposure scenarios related to exposure scenario 11: Blowing agents (worker) Contributing exposure scenario 1

## **General information** Applies to all contributing exposure scenarios related to exposure scenario 11: Blowing agents (environment)

## List of use descriptors

Environmental release categories [ERC]:

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

ERC10a: Wide dispersive outdoor use of long-life articles and materials with low release **Operational conditions** 

Product characteristics:	Substance is a unique structure, ketone, readily biodegradable
	Amounts used:
	Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone'
	to calculate your maxium tonnage/year.
Duration and frequency of	of use:
	360 d/y

Other relevant operational conditions:

Indoor/Outdoor use

## **Exposure prediction**

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used. Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR): ECT Acetone

#### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used. Typical technical measures are closed systems or scrubbers or charcoal adsorbers. Treat air emission to provide a typical removal efficiency of (%): 90 %

#### **Disposal considerations**

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

## Contributing exposure scenario 2 General information Applies to all contributing exposure scenarios related to exposure scenario 11: Blowing agents (worker)

## List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC12: Use of blowing agents in manufacture of foam

## **Operational conditions**

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.) Duration and frequency of use:

Covers daily exposures up to 8h

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

## **Exposure prediction**

Exposure estimation and reference to its source: refer to GES No. 0 industrial Risk characterisation ratio (RCR): refer to GES No. 0 industrial

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

# Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

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#### **Exposure scenario 11: Mining chemicals** List of use descriptors Sector of uses [SU]: SU3: Industrial uses Application Activities and processes: Covers the use of the substance in extraction processes at mining operations, including material transfers, winning and separation activities, and substance recovery and disposal Remark: Process categories [PROC] PROC1, PROC2, PROC3, PROC4, PROC5, PROC8b, PROC9 Control of worker exposure: See section risk management measures Human Health, Worker exposure and risk assessment: Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website: http://cefic.org/templates/shwPublications.asp?HID=750 Examples for Environmental release categories [ERC]: ERC8d Environment, ECT acetone: Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium: http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenolderivatives-reach-consortium.aspx Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Contributing Scenarios: General information Page 55 1 Applies to all contributing exposure scenarios related to exposure scenario 12: Mining chemicals (environment) 2 Page 56 General information Applies to all contributing exposure scenarios related to exposure scenario 12: Mining chemicals (worker) Contributing exposure scenario 1

## **General information** Applies to all contributing exposure scenarios related to exposure scenario 12: Mining chemicals (environment)

Environmental release ca	ategories [ERC]:
	ERC8d: wide dispersive outdoor use of processing aids in open systems
Operational cond	itions
Product characteristics:	Substance is a unique structure, ketone, readily biodegradable
	Amounts used: Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maxium tonnage/year.
Duration and frequency of	
	360 d/y
Other relevant operationa	
	Indoor/Outdoor use

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used. Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR):

ECT Acetone

#### Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used. Typical technical measures are closed systems or scrubbers or charcoal adsorbers. Treat air emission to provide a typical removal efficiency of (%): 90 %

#### **Disposal considerations**

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

## Contributing exposure scenario 2

## General information Applies to all contributing exposure scenarios related to exposure scenario 12: Mining chemicals (worker)

## List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

## **Operational conditions**

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.) Duration and frequency of use:

Covers daily exposures up to 8h

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

## **Exposure prediction**

Exposure estimation and reference to its source: refer to GES No. 0 industrial Risk characterisation ratio (RCR): refer to GES No. 0 industrial

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

# Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

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## Exposure scenario 12: Generic exposure scenario (GES): Professional Processes relevant for Acetone containing products (ES 13 - 22)

## List of use descriptors

Sector of uses [SU]:	SU22	: Professional uses	
Application			
Activities and processes:		ric exposure scenario, applies to all contributing exposure scenarios related t sure scenario 13 - 22 (professional uses):	to
	ES14 ES15 ES16 ES17 ES18 ES19 ES20 ES21 ES22	<ul> <li>Use in laboratories</li> <li>Uses in coatings</li> <li>Use in binders and release agents</li> <li>Polymer manufacturing</li> <li>Polymer processing</li> <li>Use in cleaning agents</li> <li>Use in oil and gas field drilling and production operations</li> <li>Agrochemical uses</li> <li>De-icing and anti-icing applications</li> <li>Explosives manufacture &amp; use</li> </ul>	
Contributing Scenarios:	1	Use in closed process, no likelihood of exposure General exposures (closed systems) (worker)	Page 59
	2	Use in closed, continuous process with occasional controlled exposure General exposures (closed systems) (worker)	Page 60
	3	Use in closed batch process (synthesis or formulation) General exposures (closed systems) (worker)	Page 60
	4	Use in batch and other process (synthesis) where opportunity for exposure arises Process sampling (open systems) (worker)	Page 61
	5	Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) Mixing operations (open systems) (worker)	Page 61
	6	Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) Mixing operations (open systems) (worker)	Page 62
	7	Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) Mixing operations (open systems) (worker)	Page 62
	8	Calendering operations Calendering (including Banburys); with local exhaust ventilation (worker)	Page 63
	9	Calendering operations Calendering (including Banburys) (worker)	Page 63
	10	Calendering operations Calendering (including Banburys) (worker)	Page 64
	11	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities Bulk transfers (worker)	Page 64
	12	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities Bulk transfers (worker)	Page 65
	13	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities Bulk transfers (worker)	Page 66

Contributing Scenarios:	14	Transfer of substance or preparation (charging/discharging) from/to	Page 66
		vessels/large containers at dedicated facilities	
		Bulk transfers (worker)	
	15	Transfer of substance or preparation into small containers (dedicated	Page 67
		filling line, including weighing)	
	10	Small package filling (worker)	
	16	Roller application or brushing	Page 67
	47	Equipment cleaning and maintenance (worker)	
	17	Roller application or brushing	Page 68
	18	Equipment cleaning and maintenance (worker)	Daga 69
	10	Roller application or brushing Equipment cleaning and maintenance (worker)	Page 68
	19	Non industrial spraying	Page 69
	19	Spraying/fogging by manual application (worker)	rage 09
	20	Non industrial spraying	Page 69
	20	Spraying/fogging by manual application (worker)	r uge oo
	21	Non industrial spraying	Page 70
		Spraying/fogging by manual application (worker)	. ege i e
	22	Non industrial spraying	Page 70
		Spraying/fogging by manual application (worker)	0
	23	Treatment of articles by dipping and pouring	Page 70
		Dipping, immersion and pouring (worker)	-
	24	Production of preparations or articles by tabletting, compression,	Page 71
		extrusion, pelletisation (worker)	
	25	Production of preparations or articles by tabletting, compression,	Page 71
		extrusion, pelletisation (worker)	
	26	Use in laboratory reagents, Laboratory activities (small scale) (worker)	Page 72
	27	Hand-mixing with intimate contact and only PPE available (PPE)	Page 72
		Hand application - Finger paints, Pastels, adhesives (worker)	
	28	Hand-mixing with intimate contact and only PPE available (PPE)	Page 73
		Hand application - Finger paints, Pastels, adhesives (worker)	

# Use in closed process, no likelihood of exposure General exposures (closed systems) (worker)

## List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure

## Exposure prediction

Exposure estimation and reference to its source: inhalative: 0.01 ppm dermal: 0.34 mg/kg/d Risk characterisation ratio (RCR): RCR: 0.002 inhalative: 0.00002 dermal: 0.002

all relevant routes: 0.002

Technical conditions and measures at process level (source) to prevent release:

Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.

Operational conditions and risk management measures:

(closed systems); Process sampling

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

Contributing exposure scenario 2

# Use in closed, continuous process with occasional controlled exposure General exposures (closed systems) (worker)

#### List of use descriptors

Process categories [PROC]:

PROC2: Use in closed, continuous process with occasional controlled exposure

## Exposure prediction

Exposure estimation and reference to its source: inhalative: 50 ppm dermal: 1.37 mg/kg/d Risk characterisation ratio (RCR): RCR: 0.11 inhalative: 0.10

> dermal: 0.01 all relevant routes: 0.11

#### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:
Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.
Operational conditions and risk management measures:
Continuous process; Process sampling
Conditions and measures related to personal protection, hygiene and health evaluation:
Use personal protective equipment as required.

Contributing exposure scenario 3

## Use in closed batch process (synthesis or formulation) General exposures (closed systems) (worker)

## List of use descriptors

Process categories [PROC]:

PROC3: Use in closed batch process (synthesis or formulation)

## **Exposure prediction**

Exposure estimation and reference to its source: inhalative: 100 ppm

dermal: 0.34 mg/kg/d Risk characterisation ratio (RCR): RCR: 0.2 inhalative: 0.20

inhalative: 0.20 dermal: 0.002 all relevant routes: 0.20

Technical conditions and measures at process level (source) to prevent release:

Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.

Operational conditions and risk management measures:

Batch process. Process sampling

Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

Contributing exposure scenario 4

# Use in batch and other process (synthesis) where opportunity for exposure arises Process sampling (open systems) (worker)

## List of use descriptors

Process categories [PROC]:

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

## Exposure prediction

Exposure estimation and reference to its source:

inhalative: 250 ppm dermal: 6.86 mg/kg/d Risk characterisation ratio (RCR): RCR: 0.54 inhalative: 0.50 dermal: 0.04 all relevant routes: 0.54

#### **Risk management measures**

Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

## Contributing exposure scenario 5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) Mixing operations (open systems) (worker)

#### List of use descriptors

Process categories [PROC]:

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

#### **Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 100 ppm (local exhaust ventilation - efficiency of at least [%]: 80) dermal: 0.07 mg/kg/d (local exhaust ventilation - efficiency of at least [%]: 99) Risk characterisation ratio (RCR): RCR: 0.2 inhalative: 0.20 dermal: 0.00

all relevant routes: 0.20

Technical conditions and measures at process level (source) to prevent release:

Ensure material transfers are under containment or extract ventilation. Operational conditions and risk management measures: Batch process; Process sampling; with local exhaust ventilation Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

Contributing exposure scenario 6

## Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) Mixing operations (open systems) (worker)

## List of use descriptors

Process categories [PROC]:

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

#### **Exposure prediction**

Exposure estimation and reference to its source: inhalative: 350 ppm (dilution ventilation effectiveness: 30 %) dermal: 13.71 mg/kg/d Risk characterisation ratio (RCR): RCR: 0.77 inhalative: 0.70 dermal: 0.07 all relevant routes: 0.77 Pick means and the sources

#### Risk management measures

Technical conditions and measures at process level (source) to prevent release: Ensure operation is undertaken outdoors. Operational conditions and risk management measures: Batch process Process sampling Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

Contributing exposure scenario 7

## Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) Mixing operations (open systems) (worker)

#### List of use descriptors

Process categories [PROC]:

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

Exposure estimation and reference to its source: inhalative: 300 ppm (exposure duration: 1 - 4 h) dermal: 13.71 mg/kg/d Risk characterisation ratio (RCR): RCR: 0.67 inhalative: 0.60 dermal: 0.07 all relevant routes: 0.67 **Risk management measures** 

Technical conditions and measures at process level (source) to prevent release: Avoid carrying out activities involving exposure for more than 4 h. Operational conditions and risk management measures: Batch process Process sampling Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

## Contributing exposure scenario 8 Calendering operations Calendering (including Banburys); with local exhaust ventilation (worker)

## List of use descriptors

Process categories [PROC]:

PROC6: Calendering operations

## **Exposure prediction**

Exposure estimation and reference to its source: inhalative: 420 ppm (local exhaust ventilation - efficiency of at least [%]: 80) dermal: 27.43 mg/kg/d (local exhaust ventilation - efficiency of at least [%]: 95) Risk characterisation ratio (RCR): RCR: 0.99 inhalative: 0.84 dermal: 0.15 all relevant routes: 0.99

## **Risk management measures**

Operational conditions and risk management measures: Ensure operation is undertaken outdoors. Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

## Contributing exposure scenario 9 Calendering operations Calendering (including Banburys) (worker)

## List of use descriptors

Process categories [PROC]:

PROC6: Calendering operations

Exposure estimation and reference to its source: inhalative: 420 ppm (dilution ventilation effectiveness: 30 %) dermal: 27.43 mg/kg/d Risk characterisation ratio (RCR): RCR: 0.99 inhalative: 0.84 dermal: 0.15 all relevant routes: 0.99 Pick meanagement meanures

#### **Risk management measures**

Operational conditions and risk management measures: Ensure operation is undertaken outdoors. Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

## Contributing exposure scenario 10 Calendering operations Calendering (including Banburys) (worker)

## List of use descriptors

Process categories [PROC]:

PROC6: Calendering operations

### Exposure prediction

Exposure estimation and reference to its source: inhalative: 360 ppm (exposure duration: 1 - 4 h) dermal: 27.43 mg/kg/d Risk characterisation ratio (RCR): RCR: 0.87 inhalative: 0.72

dermal: 0.15 all relevant routes: 0.87

## **Risk management measures**

Operational conditions and risk management measures: Avoid carrying out activities involving exposure for more than 4 h. Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

Contributing exposure scenario 11

## Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities Bulk transfers (worker)

## List of use descriptors

Process categories [PROC]:

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

Exposure estimation and reference to its source:

inhalative: 100 ppm (local exhaust ventilation - efficiency of at least [%]: 80) dermal: 0.14 mg/kg/d (local exhaust ventilation - efficiency of at least [%]: 99) Risk characterisation ratio (RCR): RCR: 0.2 inhalative: 0.20 dermal: 0.001 all relevant routes: 0.20

#### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release: Ensure material transfers are under containment or extract ventilation. Operational conditions and risk management measures: Non-dedicated facility Transfer from/pouring from containers with local exhaust ventilation Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

Contributing exposure scenario 12

## Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities Bulk transfers (worker)

## List of use descriptors

Process categories [PROC]:

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

#### Exposure prediction

Exposure estimation and reference to its source: inhalative: 350 ppm (dilution ventilation effectiveness: 30 %) dermal: 13.71 mg/kg/d Risk characterisation ratio (RCR): RCR: 0.77 inhalative: 0.70 dermal: 0.07 all relevant routes: 0.77

## **Risk management measures**

Technical conditions and measures at process level (source) to prevent release: Ensure operation is undertaken outdoors. Operational conditions and risk management measures: Non-dedicated facility Transfer from/pouring from containers Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

## Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities Bulk transfers (worker)

## List of use descriptors

Process categories [PROC]:

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

#### **Exposure prediction**

Exposure estimation and reference to its source: inhalative: 300 ppm (exposure duration: 1 - 4 h) dermal: 13.71 mg/kg/d Risk characterisation ratio (RCR): RCR: 0.67 inhalative: 0.60 dermal: 0.07 all relevant routes: 0.67

#### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release: Avoid carrying out activities involving exposure for more than 4 h. Operational conditions and risk management measures: Non-dedicated facility Transfer from/pouring from containers Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

Contributing exposure scenario 14

## Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities Bulk transfers (worker)

## List of use descriptors

Process categories [PROC]:

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

## **Exposure prediction**

Exposure estimation and reference to its source: inhalative: 250 ppm dermal: 6.86 mg/kg/d Risk characterisation ratio (RCR): RCR: 0.54 inhalative: 0.50 dermal: 0.04

all relevant routes: 0.54

#### **Risk management measures**

Operational conditions and risk management measures: Dedicated facility Transfer from/pouring from containers Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

# Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

Small package filling (worker)

## List of use descriptors

Process categories [PROC]:

PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

#### **Exposure prediction**

Exposure estimation and reference to its source: inhalative: 250 ppm dermal: 6.86 mg/kg/d Risk characterisation ratio (RCR): RCR: 0.54 inhalative: 0.50 dermal: 0.04 all relevant routes: 0.54

#### **Risk management measures**

Operational conditions and risk management measures: Dedicated facility; Pouring from small containers Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

Contributing exposure scenario 16

## Roller application or brushing Equipment cleaning and maintenance (worker)

#### List of use descriptors

Process categories [PROC]:

PROC10: Roller application or brushing

## **Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 100 ppm (local exhaust ventilation - efficiency of at least [%]: 80) dermal: 1.37 mg/kg/d (local exhaust ventilation - efficiency of at least [%]: 95) Risk characterisation ratio (RCR): RCR: 0.21 inhalative: 0.20 dermal: 0.007 all relevant routes: 0.21

## **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Ensure material transfers are under containment or extract ventilation. Operational conditions and risk management measures:

Or: Equipment cleaning and maintenance; with local exhaust ventilation Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

## Roller application or brushing

Equipment cleaning and maintenance (worker)

## List of use descriptors

Process categories [PROC]:

PROC10: Roller application or brushing

## Exposure prediction

Exposure estimation and reference to its source: inhalative: 300 ppm (TRA Concentration factor 5 - 25 %) dermal: 16.46 mg/kg/d (TRA Concentration factor 5 - 25 %) Risk characterisation ratio (RCR): RCR: 0.69 inhalative: 0.60 dermal: 0.09 all relevant routes: 0.69

## **Risk management measures**

Technical conditions and measures at process level (source) to prevent release: Limit the substance content in the product to 25 %. Operational conditions and risk management measures: Or: Equipment cleaning and maintenance Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

## Contributing exposure scenario 18 Roller application or brushing Equipment cleaning and maintenance (worker)

## List of use descriptors

Process categories [PROC]:

PROC10: Roller application or brushing

## **Exposure prediction**

Exposure estimation and reference to its source: inhalative: 300 ppm (exposure duration: 1-4 h) dermal: 27.43 mg/kg/d Risk characterisation ratio (RCR): RCR: 0.75 inhalative: 0.60 dermal: 0.15 all relevant routes: 0.75

## **Risk management measures**

Technical conditions and measures at process level (source) to prevent release: Avoid carrying out activities involving exposure for more than 4 h. Operational conditions and risk management measures: Or: Equipment cleaning and maintenance

Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

## Contributing exposure scenario 19 Non industrial spraying Spraying/fogging by manual application (worker)

## List of use descriptors

Process categories [PROC]:

PROC11: Non industrial spraying

## Exposure prediction

Exposure estimation and reference to its source:

inhalative: 200 ppm (local exhaust ventilation - efficiency of at least [%]: 80) dermal: 2.14 mg/kg/d (local exhaust ventilation - efficiency of at least [%]: 98) Risk characterisation ratio (RCR): RCR: 0.41 inhalative: 0.40 dermal: 0.01 all relevant routes: 0.41

## **Risk management measures**

Technical conditions and measures at process level (source) to prevent release: Ensure material transfers are under containment or extract ventilation. Operational conditions and risk management measures: with local exhaust ventilation Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

## Contributing exposure scenario 20 Non industrial spraying Spraying/fogging by manual application (worker)

## List of use descriptors

Process categories [PROC]:

PROC11: Non industrial spraying

## **Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 252 ppm (local exhaust ventilation - efficiency of at least [%]: 30; TRA Concentration factor 5 - 25 %; Exposure duration: 1-4 h) dermal: 64.28 mg/kg/d (TRA Concentration factor 5 - 25 %) Risk characterisation ratio (RCR): RCR: 0.85 inhalative: 0.50 dermal: 0.35 all relevant routes: 0.85

## **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Limit the substance content in the product to 25 %. Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure for more than 4 h. Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

## Non industrial spraying

## Spraying/fogging by manual application (worker)

## List of use descriptors

Process categories [PROC]:

PROC11: Non industrial spraying

## Exposure prediction

Exposure estimation and reference to its source: inhalative: 200 ppm (Exposure duration: 15 min - 1 h) dermal: 107.14 mg/kg/d Risk characterisation ratio (RCR): RCR: 0.98 inhalative: 0.40 dermal: 0.58 all relevant routes: 0.98

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release: Avoid carrying out activities involving exposure for more than 1 h. Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

## Contributing exposure scenario 22 Non industrial spraying Spraying/fogging by manual application (worker)

## List of use descriptors

Process categories [PROC]:

PROC11: Non industrial spraying

## **Exposure prediction**

Exposure estimation and reference to its source: inhalative: 100 ppm (Respiratory protective device, efficiency of 90%)

dermal: 107.14 mg/kg/d Risk characterisation ratio (RCR):

RCR: 0.78 inhalative: 0.20 dermal: 0.58 all relevant routes: 0.78

## Risk management measures

Conditions and measures related to personal protection, hygiene and health evaluation: Wear a respirator conforming to EN140 with Type A filter or better.

Contributing exposure scenario 23

# Treatment of articles by dipping and pouring Dipping, immersion and pouring (worker)

## List of use descriptors

Process categories [PROC]:

PROC13: Treatment of articles by dipping and pouring

Exposure estimation and reference to its source: inhalative: 250 ppm dermal: 13.71 mg/kg/d Risk characterisation ratio (RCR): RCR: 0.57 inhalative: 0.50 dermal: 0.07 all relevant routes: 0.57

#### **Risk management measures**

Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

Contributing exposure scenario 24

Production of preparations or articles by tabletting, compression, extrusion, pelletisation (worker)

## List of use descriptors

Process categories [PROC]:

PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation

#### **Exposure prediction**

Exposure estimation and reference to its source:

inhalative: 100 ppm (local exhaust ventilation - efficiency of at least [%]: 80) dermal: 0.34 mg/kg/d (local exhaust ventilation - efficiency of at least [%]: 90) Risk characterisation ratio (RCR): RCR: 0.2 inhalative: 0.20 dermal: 0.002 all relevant routes: 0.20

## **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Ensure material transfers are under containment or extract ventilation.

Operational conditions and risk management measures:

with local exhaust ventilation Conditions and measures related to personal protection, hygiene and health evaluation:

Use personal protective equipment as required.

Contributing exposure scenario 25

Production of preparations or articles by tabletting, compression, extrusion, pelletisation (worker)

## List of use descriptors

Process categories [PROC]:

PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation

Exposure estimation and reference to its source: inhalative: 300 ppm (TRA exposure duration 1 - 4 h) dermal: 3.43 mg/kg/d (local exhaust ventilation - efficiency of at least [%]: 90) Risk characterisation ratio (RCR): RCR: 0.62 inhalative: 0.60 dermal: 0.02 all relevant routes: 0.62 Pick management mageures

#### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release: Avoid carrying out activities involving exposure for more than 4 h. Operational conditions and risk management measures: with local exhaust ventilation Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

Contributing exposure scenario 26 Use in laboratory reagents, Laboratory activities (small scale) (worker)

#### List of use descriptors

Process categories [PROC]:

PROC15: Use as laboratory reagent

#### Exposure prediction

Exposure estimation and reference to its source: inhalative: 50 ppm dermal: 0.34 mg/kg/d Risk characterisation ratio (RCR): RCR: 0.1 inhalative: 0.10 dermal: 0.002 all relevant routes: 0.10

### **Risk management measures**

Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

Contributing exposure scenario 27

## Hand-mixing with intimate contact and only PPE available (PPE) Hand application - Finger paints, Pastels, adhesives (worker)

## List of use descriptors

Process categories [PROC]:

PROC19: Hand-mixing with intimate contact and only PPE available

#### Exposure prediction

Exposure estimation and reference to its source: inhalative: 300 ppm (TRA Concentration factor 5 - 25 %) dermal: 16.97 mg/kg/d (TRA Concentration factor 5 - 25 %; Gloves) Risk characterisation ratio (RCR): RCR: 0.96 inhalative: 0.60 dermal: 0.09 all relevant routes: 0.69

Technical conditions and measures at process level (source) to prevent release: Limit the substance content in the product to 25 %. Conditions and measures related to personal protection, hygiene and health evaluation: Wear suitable gloves tested to EN374.

Contributing exposure scenario 28 Hand-mixing with intimate contact and only PPE available (PPE) Hand application - Finger paints, Pastels, adhesives (worker)

## List of use descriptors

Process categories [PROC]

PROC19: Hand-mixing with intimate contact and only PPE available

## **Exposure prediction**

Exposure estimation and reference to its source: inhalative: 100 ppm (TRA exposure duration 15 min - 1 h) dermal: 141.43 mg/kg/d

Risk characterisation ratio (RCR):

RCR: 0.96 inhalative: 0.20 dermal: 0.76 all relevant routes: 0.96

#### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release: Avoid carrying out activities involving exposure for more than 1h. Conditions and measures related to personal protection, hygiene and health evaluation: Use personal protective equipment as required.

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

not applicable

## Exposure scenario 13: Use in laboratories

## List of use descriptors

equipment cleaning		
Use of small quantities within laboratory settings, including material transfers and equipment cleaning Process categories [PROC] PROC10, PROC15 Process Categories (additionally): PROC19		
Control of worker exposure:		
Human Health, Worker exposure and risk assessment: Exposure assessment and method: Shown are the result of the quantitative exposit risk assessment prepared based on the 'GES Worker Chemical Safety Assessme (CSA) Template'. This tool can be downloaded from the CEFIC website: http://cefic.org/templates/shwPublications.asp?HID=750		
Examples for Environmental release categories [ERC]:		
Environment, ECT acetone: Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enable performance of scaling calculation for specific local environmental conditions. It of downloaded from the web page of the Phenol & Derivatives REACH-consortium: http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/p derivatives-reach-consortium.aspx	an be	
Guidance to check compliance with the exposure scenario: Guidance is based or assumed operating conditions which may not be applicable to all sites; thus, scalin be necessary to define appropriate site-specific risk management measures.		
1 General information Applies to all contributing exposure scenarios related to exposure	Page 74	
<ul> <li>General information</li> <li>Applies to all contributing exposure scenarios related to exposure scenario 13: Use in laboratories (worker)</li> </ul>	Page 75	
	<ul> <li>Process Categories (additionally): PROC19</li> <li>Control of worker exposure:</li> <li>See section risk management measures</li> <li>Human Health, Worker exposure and risk assessment:</li> <li>Exposure assessment and method: Shown are the result of the quantitative exposurisk assessment prepared based on the 'GES Worker Chemical Safety Assessmet (CSA) Template'. This tool can be downloaded from the CEFIC website: http://cefic.org/templates/shwPublications.asp?HID=750</li> <li>Examples for Environmental release categories [ERC]:</li> <li>ERC8a</li> <li>Environment, ECT acetone:</li> <li>Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enab performance of scaling calculation for specific local environmental conditions. It of downloaded from the web page of the Phenol &amp; Derivatives REACH-consortium: http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/pderivatives-reach-consortium.aspx</li> <li>Guidance to check compliance with the exposure scenario: Guidance is based or assumed operating conditions which may not be applicable to all sites; thus, scalin be necessary to define appropriate site-specific risk management measures.</li> <li>1 General information</li></ul>	

List of use descriptors		
Environmental release c	ategories [ERC]: ERC8a: wide dispersive indoor use of processing aids in open systems	
Operational cond	litions	
Product characteristics:	Substance is a unique structure, ketone, readily biodegradable	
	Amounts used: Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maxium tonnage/year.	
Duration and frequency of	of use:	
	360 d/y	
Other relevant operation	al conditions: Indoor/Outdoor use	

#### **Exposure prediction**

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used. Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR):

ECT Acetone

### Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used. Typical technical measures are closed systems or scrubbers or charcoal adsorbers. Treat air emission to provide a typical removal efficiency of (%): 90

### **Disposal considerations**

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

### Contributing exposure scenario 2

### General information Applies to all contributing exposure scenarios related to exposure scenario 13: Use in laboratories (worker)

### List of use descriptors

Process categories [PROC]:

PROC10: Roller application or brushing

PROC15: Use as laboratory reagent

PROC19: Hand-mixing with intimate contact and only PPE available

### **Operational conditions**

Product characteristics: liquid, vapour pressure > 10 kPa Concentration of the substance in a mixture: Covers percentage substance in the product up to 100 % (unless stated differently.) Duration and frequency of use: Covers daily exposures up to 8h (unless stated differently) Other relevant operational conditions: Assumes a good basic standard of occupational hygiene is implemented. **Exposure prediction** Exposure estimation and reference to its source: refer to GES No. 12 professional Risk characterisation ratio (RCR): refer to GES No. 12 professional **Risk management measures** Conditions and measures related to information and behavioural advice to consumers:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

### Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

## Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

## Exposure scenario 14: Uses in coatings

### List of use descriptors

List of use dest	
Sector of uses [SU]: Application	SU22: Professional uses
Remark:	Process categories [PROC] PROC5, PROC 8a, PROC10, PROC13 Process Categories (additionally): PROC1, PROC2, PROC3, PROC4, PROC8b, PROC9, PROC11, PROC15, PROC19
	Control of worker exposure: See section risk management measures
	Human Health, Worker exposure and risk assessment: Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website: http://cefic.org/templates/shwPublications.asp?HID=750
	Examples for Environmental release categories [ERC]: ERC8a, ERC8c, ERC8d, ERC8f
	Environment, ECT acetone: Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium: http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol- derivatives-reach-consortium.aspx
	Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Contributing Scenarios:	1 General information Page 77 Applies to all contributing exposure scenarios related to exposure scenario 14: Uses in coatings (environment)
	2 General information Page 78 Applies to all contributing exposure scenarios related to exposure scenario 14: Uses in coatings (worker)

### Contributing exposure scenario 1

### General information Applies to all contributing exposure scenarios related to exposure scenario 14: Uses in coatings (environment)

### List of use descriptors

Environmental release ca	ategories [ERC]:
	ERC8a: wide dispersive indoor use of processing aids in open systems ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC8d: wide dispersive outdoor use of processing aids in open systems ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix
Operational cond	itions
Product characteristics:	Substance is a unique structure, ketone, readily biodegradable
	Amounts used:
	Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone'
	to calculate your maxium tonnage/year.
Duration and frequency of	of use:
	360 d/y

Indoor/Outdoor use

### **Exposure prediction**

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used. Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR): ECT Acetone

#### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used. Typical technical measures are closed systems or scrubbers or charcoal adsorbers. Treat air emission to provide a typical removal efficiency of (%): 90

Operational conditions and risk management measures:

Common practices vary across sites thus conservative process release estimates used. Please use the 'ECT Acetone' to check your local conditions.

### **Disposal considerations**

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

### Contributing exposure scenario 2

### General information Applies to all contributing exposure scenarios related to exposure scenario 14: Uses in coatings (worker)

#### List of use descriptors

Process categories [PROC]:

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC11: Non industrial spraving PROC15: Use as laboratory reagent PROC19: Hand-mixing with intimate contact and only PPE available

### **Operational conditions**

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.)

Duration and frequency of use:

Covers daily exposures up to 8h (unless stated differently)

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

### **Exposure prediction**

Exposure estimation and reference to its source: refer to GES No. 12 professional Risk characterisation ratio (RCR):

refer to GES No. 12 professional

### **Risk management measures**

Conditions and measures related to information and behavioural advice to consumers:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

## Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

### Exposure scenario 15: Use in binders and release agents

### List of use descriptors

SU22: Professional uses
Covers the use as binders and release agents including material transfers, mixing, application (including spraying and brushing), mould forming and casting and handling of waste Process categories [PROC] PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9,
PROC10, PROC11 Control of worker exposure: See section risk management measures
Human Health, Worker exposure and risk assessment: Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website: http://cefic.org/templates/shwPublications.asp?HID=750
Examples for Environmental release categories [ERC]: ERC8a, ERC8b, ERC8c, ERC8d, ERC8e, ERC8f
Environment, ECT acetone: Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium: http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol- derivatives-reach-consortium.aspx
Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
<ol> <li>General information Applies to all contributing exposure scenarios related to exposure scenario 15: Use in binders and release agents (environment)</li> <li>General information Applies to all contributing exposure scenarios related to exposure scenario 15: Use in binders and release agents (worker)</li> </ol>

#### Contributing exposure scenario 1

### General information

## Applies to all contributing exposure scenarios related to exposure scenario 15: Use in binders and release agents (environment)

### List of use descriptors

Environmental release categories [ERC]:

ERC8a: wide dispersive indoor use of processing aids in open systems ERC8b: Wide dispersive indoor use of reactive substances in open systems ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC8d: wide dispersive outdoor use of processing aids in open systems ERC8e: Wide dispersive outdoor use of reactive substances in open systems ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix

### **Operational conditions**

Product characteristics: Substance is a unique structure, ketone, readily biodegradable

Amounts used: Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maxium tonnage/year. Duration and frequency of use: 360 d/y Other relevant operational conditions: Indoor/Outdoor use

#### **Exposure prediction**

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used. Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR):

ECT Acetone

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used. Typical technical measures are closed systems or scrubbers or charcoal adsorbers. Treat air emission to provide a typical removal efficiency of (%): 90

### **Disposal considerations**

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

### Contributing exposure scenario 2

General information

## Applies to all contributing exposure scenarios related to exposure scenario 15: Use in binders and release agents (worker)

### List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

PROC6: Calendering operations

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

PROC10: Roller application or brushing

PROC11: Non industrial spraying

### **Operational conditions**

Product characteristics: liquid, vapour pressure > 10 kPa Concentration of the substance in a mixture: Covers percentage substance in the product up to 100 % (unless stated differently.) Duration and frequency of use: Covers daily exposures up to 8h (unless stated differently) Other relevant operational conditions: Assumes a good basic standard of occupational hygiene is implemented. **Exposure prediction** Exposure estimation and reference to its source: refer to GES No. 12 professional Risk characterisation ratio (RCR): refer to GES No. 12 professional **Risk management measures** Technical conditions and measures at process level (source) to prevent release: Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Operational conditions and risk management measures: Locate bulk storage outdoors. Conditions and measures related to personal protection, hygiene and health evaluation: Use suitable eye protection. If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

## Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

## Exposure scenario 16: Polymer production

### List of use descriptors

Sector of uses [S Application	
Activities and pro Remark:	Cresses: Manufacturing of formulated polymers Process categories [PROC]: PROC8a Process Categories (additionally): PROC1, PROC2, PROC8b, PROC9, PROC14 Control of worker exposure:
	See section risk management measures
	Human Health, Worker exposure and risk assessment: Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website: http://cefic.org/templates/shwPublications.asp?HID=750
	Examples for Environmental release categories [ERC]: ERC8a, ERC8d, ERC8c, ERC8f
	Environment, ECT acetone: Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium: http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol- derivatives-reach-consortium.aspx
	Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Contributing Sce	Page 83 Applies to all contributing exposure scenarios related to exposure scenario 16: Polymer production (environment)
	2 General information Page 84 Applies to all contributing exposure scenarios related to exposure scenario 16: Polymer production (worker)

### General information Applies to all contributing exposure scenarios related to exposure scenario 16: Polymer production (environment)

### List of use descriptors

Environmental release ca	ategories [ERC]:
	ERC8a: wide dispersive indoor use of processing aids in open systems ERC8d: wide dispersive outdoor use of processing aids in open systems ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix
Operational conditions	
Product characteristics:	Substance is a unique structure, ketone, readily biodegradable
	Amounts used:
	Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maxium tonnage/year.
Duration and frequency of	
	360 d/y

Indoor/Outdoor use

### **Exposure prediction**

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used. Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR): ECT Acetone

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used. Typical technical measures are closed systems or scrubbers or charcoal adsorbers. Treat air emission to provide a typical removal efficiency of (%): 90 %

### **Disposal considerations**

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

### Contributing exposure scenario 2 General information Applies to all contributing exposure scenarios related to exposure scenario 16: Polymer production (worker)

### List of use descriptors

Process categories [PROC]:

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation

### **Operational conditions**

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.) Duration and frequency of use:

Covers daily exposures up to 8h (unless stated differently)

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

### **Exposure prediction**

Exposure estimation and reference to its source: refer to GES No. 12 professional Risk characterisation ratio (RCR): refer to GES No. 12 professional

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

## Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

### Exposure scenario 17: Polymer processing

### List of use descriptors

Sector of uses [SU]: Application	SU22: Professional uses
Activities and processes: Remark:	Processing of formulated polymers including material transfers, moulding and forming activities, material re-works and associated maintenance Process categories [PROC]: PROC8a Process Categories (additionally): PROC1, PROC2, PROC8b, PROC9, PROC14
	Control of worker exposure: See section risk management measures
	Human Health, Worker exposure and risk assessment: Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website: http://cefic.org/templates/shwPublications.asp?HID=750
	Examples for Environmental release categories [ERC]: ERC8a, ERC8d, ERC8c, ERC8f
	Environment, ECT acetone: Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium: http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol- derivatives-reach-consortium.aspx
	Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Contributing Scenarios:	1 General information Page 86 Applies to all contributing exposure scenarios related to exposure scenario 17: Polymer processing (environment)
	2 General information Page 87 Applies to all contributing exposure scenarios related to exposure scenario 17: Polymer processing (worker)

### Contributing exposure scenario 1

General information

## Applies to all contributing exposure scenarios related to exposure scenario 17: Polymer processing (environment)

### List of use descriptors

Environmental release categories [ERC]:

ERC8a: wide dispersive indoor use of processing aids in open systems ERC8d: wide dispersive outdoor use of processing aids in open systems ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix

### **Operational conditions**

Product characteristics: Substance is a unique structure, ketone, readily biodegradable

Amounts used:

Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maxium tonnage/year.

Duration and frequency of use:

360 d/y

Other relevant operational conditions:

Indoor/Outdoor use

### **Exposure prediction**

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used. Please use the 'ECT Acetone' to check your local conditions. Risk characterisation ratio (RCR):

ECT Acetone

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used. Typical technical measures are closed systems or scrubbers or charcoal adsorbers. Treat air emission to provide a typical removal efficiency of (%): 90 %

### **Disposal considerations**

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions. Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

### Contributing exposure scenario 2 General information Applies to all contributing exposure scenarios related to exposure scenario 17: Polymer processing (worker)

### List of use descriptors

Process categories [PROC]:

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
PROC1: Use in closed process, no likelihood of exposure
PROC2: Use in closed, continuous process with occasional controlled exposure
PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation

### **Operational conditions**

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.) Duration and frequency of use:

Covers daily exposures up to 8h (unless stated differently)

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

### **Exposure prediction**

Exposure estimation and reference to its source: refer to GES No. 12 professional Risk characterisation ratio (RCR): refer to QEO No. 12 professional

refer to GES No. 12 professional

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

## Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

## Exposure scenario 18: Use in cleaning agents

### List of use descriptors

	SU22: Professional uses
Application	
	Covers the use as a component of cleaning products including pouring/unloading from drums or containers and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by han Process categories [PROC]
	PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC19
	Control of worker exposure: See section risk management measures
	Human Health, Worker exposure and risk assessment: Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website: http://cefic.org/templates/shwPublications.asp?HID=750
	Examples for Environmental release categories [ERC]: ERC8a, Environmental release categories (additionally): ERC8d
	Environment, ECT acetone: Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium: http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol derivatives-reach-consortium.aspx
	Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Contributing Scenarios:	1 General information Page Applies to all contributing exposure scenarios related to exposure scenario 18: Use in cleaning agents (environment)
	2 General information Page Applies to all contributing exposure scenarios related to exposure scenario 18: Use in cleaning agents (worker)

### List of use descriptors

Environmental release ca	5 1 1
	ERC8a: wide dispersive indoor use of processing aids in open systems
<b>Operational cond</b>	itions
Product characteristics:	Substance is a unique structure, ketone, readily biodegradable
	Amounts used:
	Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone'
	to calculate your maxium tonnage/year.
Duration and frequency of	if use:
	360 d/y

Indoor/Outdoor use

### **Exposure prediction**

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used. Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR): ECT Acetone

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used. Typical technical measures are closed systems or scrubbers or charcoal adsorbers. Treat air emission to provide a typical removal efficiency of (%): 90

### **Disposal considerations**

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

### Contributing exposure scenario 2 General information Applies to all contributing exposure scenarios related to exposure scenario 18: Use in cleaning agents (worker)

### List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring PROC19: Hand-mixing with intimate contact and only PPE available

### **Operational conditions**

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.) Duration and frequency of use:

Covers daily exposures up to 8h (unless stated differently)

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

### **Exposure prediction**

Exposure estimation and reference to its source: refer to GES No. 12 professional Risk characterisation ratio (RCR):

refer to GES No. 12 professional

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

## Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

## Exposure scenario 19: Oil field well drilling and production operations

### List of use descriptors

Sector of uses [SU]: Application	SU22: Professional uses
Activities and processes:	Covers the use as a component of cleaning products including pouring/unloading from drums or containers
Remark:	Process categories [PROC] PROC1, PROC2, PROC3, PROC4,PROC8a, PROC8b
	Control of worker exposure: See section risk management measures
	Human Health, Worker exposure and risk assessment: Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website: http://cefic.org/templates/shwPublications.asp?HID=750
	Examples for Environmental release categories [ERC]: ERC8d
	Environment, ECT acetone: Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium: http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol- derivatives-reach-consortium.aspx
	Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Contributing Scenarios:	1 General information Page 92 Applies to all contributing exposure scenarios related to exposure scenario 19: Oil field well drilling and production operations
	<ul> <li>(environment)</li> <li>2 General information</li> <li>Applies to all contributing exposure scenarios related to exposure scenario 19: Oil field well drilling and production operations (worker)</li> </ul>

### Contributing exposure scenario 1

### **General information**

## Applies to all contributing exposure scenarios related to exposure scenario 19: Oil field well drilling and production operations (environment)

### List of use descriptors

Environmental release ca	ategories [ERC]:
	ERC8d: wide dispersive outdoor use of processing aids in open systems
Operational cond	itions
Product characteristics:	Substance is a unique structure, ketone, readily biodegradable
	Amounts used: Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone' to calculate your maxium tonnage/year.
Duration and frequency of	
	360 d/y
Other relevant operationa	
	Indoor/Outdoor use

### **Exposure prediction**

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used. Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR):

ECT Acetone

### Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used. Typical technical measures are closed systems or scrubbers or charcoal adsorbers. Treat air emission to provide a typical removal efficiency of (%): 90 %

### **Disposal considerations**

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal: External treatment and disposal of waste should comply with applicable local and/or

national regulations.

### Contributing exposure scenario 2 General information Applies to all contributing exposure scenarios related to exposure scenario 19: Oil field well drilling and production operations (worker)

### List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

### **Operational conditions**

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.) Duration and frequency of use:

Covers daily exposures up to 8h (unless stated differently)

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

### Exposure prediction

Exposure estimation and reference to its source:

refer to GES No. 12 professional Risk characterisation ratio (RCR):

refer to GES No. 12 professional

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

## Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

## Exposure scenario 20: Agrochemical uses

### List of use descriptors

	· · · · · · · · · · · · · · · · · · ·
Sector of uses [SU]: Application	SU22: Professional uses
Activities and processes	Use as an agrochemical excipient for application by manual or machine spraying, smokes and fogging; including equipment clean-downs and disposal.
Remark:	Process categories [PROC] PROC1, PROC2, PROC4, PROC8a, PROC8b, PROC11, PROC13, PROC19
	Control of worker exposure: See section risk management measures
	Human Health, Worker exposure and risk assessment: Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website: http://cefic.org/templates/shwPublications.asp?HID=750
	Examples for Environmental release categories [ERC]: ERC8a, ERC8d
	Environment, ECT acetone: Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium: http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol- derivatives-reach-consortium.aspx
	Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Contributing Scenarios:	Applies to all contributing exposure scenarios related to exposure
	<ul> <li>scenario 20: Agrochemical uses (environment)</li> <li>General information</li> <li>Applies to all contributing exposure scenarios related to exposure scenario 20: Agrochemical uses (worker)</li> </ul>

### Contributing exposure scenario 1

### General information Applies to all contributing exposure scenarios related to exposure scenario 20: Agrochemical uses (environment)

### List of use descriptors

Environmental release c	ategories [ERC]:
	ERC8a: wide dispersive indoor use of processing aids in open systems ERC8d: wide dispersive outdoor use of processing aids in open systems
Operational cond	litions
Product characteristics:	Substance is a unique structure, ketone, readily biodegradable
	Amounts used:
	Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone'
	to calculate your maxium tonnage/year.
Duration and frequency of	of use:
	360 d/y
Other relevant operation	al conditions:
	Indoor/Outdoor use

### **Exposure prediction**

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used. Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR):

ECT Acetone

### Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used. Typical technical measures are closed systems or scrubbers or charcoal adsorbers. Treat air emission to provide a typical removal efficiency of (%): 90

### **Disposal considerations**

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

### Contributing exposure scenario 2 General information Applies to all contributing exposure scenarios related to exposure scenario 20: Agrochemical uses (worker)

### List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring PROC19: Hand-mixing with intimate contact and only PPE available

### **Operational conditions**

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.) Duration and frequency of use:

Covers daily exposures up to 8h (unless stated differently)

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

### **Exposure prediction**

Exposure estimation and reference to its source: refer to GES No. 12 professional Risk characterisation ratio (RCR): refer to GES No. 12 professional

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

## Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

## Exposure scenario 21: De-icing and anti-icing applications

### List of use descriptors

Sector of uses [SU]: Application	SU22: Professional uses
	Ice prevention and de-icing of vehicles, aircraft and other equipment by spraying. Process categories [PROC] PROC1, PROC2, PROC8b, PROC11, PROC19
	Control of worker exposure: See section risk management measures
	Human Health, Worker exposure and risk assessment: Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website: http://cefic.org/templates/shwPublications.asp?HID=750
	Examples for Environmental release categories [ERC]: ERC8d
	Environment, ECT acetone: Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium: http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol- derivatives-reach-consortium.aspx
	Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Contributing Scenarios:	1 General information Page 98 Applies to all contributing exposure scenarios related to exposure scenario 21: De-icing and anti-icing applications (environment)
	2 General information Page 99 Applies to all contributing exposure scenarios related to exposure scenario 21: De-icing and anti-icing applications (worker)

### General information Applies to all contributing exposure scenarios related to exposure scenario 21: De-icing and anti-icing applications (environment)

### List of use descriptors

Environmental release categories [ERC]:

ERC8d: wide dispersive outdoor use of processing aids in open systems

### **Operational conditions**

Product characteristics:	Substance is a unique structure, ketone, readily biodegradable
	Amounts used:
	Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone'
	to calculate your maxium tonnage/year.
Duration and frequency of	of use:
	360 d/y
Other relevant operational conditions:	
	Indoor/Outdoor use

### **Exposure prediction**

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used. Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR):

ECT Acetone

### Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used. Typical technical measures are closed systems or scrubbers or charcoal adsorbers. Treat air emission to provide a typical removal efficiency of (%): 90

### **Disposal considerations**

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

### Contributing exposure scenario 2

### General information Applies to all contributing exposure scenarios related to exposure scenario 21: De-icing and anti-icing applications (worker)

### List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC11: Non industrial spraying PROC19: Hand-mixing with intimate contact and only PPE available

### **Operational conditions**

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.) Duration and frequency of use:

Covers daily exposures up to 8h (unless stated differently)

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

### Exposure prediction

Exposure estimation and reference to its source:

refer to GES No. 12 professional

Risk characterisation ratio (RCR):

refer to GES No. 12 professional

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

## Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

## Exposure scenario 22: Explosives manufacture & use

### List of use descriptors

Sector of uses [SU]: Application	SU22: Professional uses
Activities and processes: Remark:	Covers exposures arising from the manufacture and use of slurry explosives including materials transfer, mixing and charging and equipment cleaning. Process categories [PROC] PROC1, PROC3, PROC5, PROC8a, PROC8b
	Control of worker exposure: See section risk management measures
	Human Health, Worker exposure and risk assessment: Exposure assessment and method: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'GES Worker Chemical Safety Assessment (CSA) Template'. This tool can be downloaded from the CEFIC website: http://cefic.org/templates/shwPublications.asp?HID=750
	Examples for Environmental release categories [ERC]: ERC8d
	Environment, ECT acetone: Please use the 'ECT Acetone' to check your local conditions. The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium: http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol- derivatives-reach-consortium.aspx
	Guidance to check compliance with the exposure scenario: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Contributing Scenarios:	1 General information Page 101 Applies to all contributing exposure scenarios related to exposure scenario 22: Explosives manufacture & use (environment)
	2 General information Page 102 Applies to all contributing exposure scenarios related to exposure scenario 22: Explosives manufacture & use (worker)

# Applies to all contributing exposure scenarios related to exposure scenario 22: Explosives manufacture & use (environment)

### List of use descriptors Environmental release categories [ERC]:

	ERC8d: wide dispersive outdoor use of processing aids in open systems		
Operational conditions			
Product characteristics:	Substance is a unique structure, ketone, readily biodegradable		
	Amounts used:		
	Annual site tonnage (tons/year): Please use the Excel-Tool 'ECT Acetone'		
	to calculate your maxium tonnage/year.		
Duration and frequency of	of use:		
	360 d/y		
Other relevant operational conditions:			
	Indoor/Outdoor use		

### **Exposure prediction**

Exposure estimation and reference to its source:

Common practices vary across sites thus conservative process release estimates used. Please use the 'ECT Acetone' to check your local conditions.

Risk characterisation ratio (RCR):

ECT Acetone

### Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used. Typical technical measures are closed systems or scrubbers or charcoal adsorbers. Treat air emission to provide a typical removal efficiency of (%): 90 %

### **Disposal considerations**

Conditions and measures related to municipal sewage treatment plant:

Please use the Excel-Tool 'ECT Acetone' to check your local conditions.

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

### Contributing exposure scenario 2

### General information Applies to all contributing exposure scenarios related to exposure scenario 22: Explosives manufacture & use (worker)

### List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure PROC3: Use in closed batch process (synthesis or formulation) PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

### **Operational conditions**

Product characteristics: liquid, vapour pressure > 10 kPa

Concentration of the substance in a mixture:

Covers percentage substance in the product up to 100 % (unless stated differently.) Duration and frequency of use:

Covers daily exposures up to 8h (unless stated differently)

Other relevant operational conditions:

Assumes a good basic standard of occupational hygiene is implemented.

### **Exposure prediction**

Exposure estimation and reference to its source:

refer to GES No. 12 professional

Risk characterisation ratio (RCR):

refer to GES No. 12 professional

### **Risk management measures**

Technical conditions and measures at process level (source) to prevent release:

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Operational conditions and risk management measures:

Locate bulk storage outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation:

Use suitable eye protection.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

## Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

'ECT Acetone': The Excel-tool enables the performance of scaling calculation for specific local environmental conditions. It can be downloaded from the web page of the Phenol & Derivatives REACH-consortium:

### Exposure scenario 23: Generic exposure scenario (GES): Consumer uses of Acetone (ES 24 -26)

## List of use descriptors

Sector of uses [SU]: Application	SU21:	Consumer uses	
Activities and processes:		ic exposure scenario, applies to all contributing exposure scenarios relate ure scenario 24 - 26 (consumer uses):	ed to
	ES25	<ul> <li>Uses in coatings</li> <li>Use in cleaning agents</li> <li>De-icing and anti-icing applications</li> </ul>	
Contributing Scenarios:	1	Adhesives, sealants Glues, hobby use (Consumer)	Page 105
	2	Adhesives, sealants Glues DIY-use (Consumer)	Page 105
		Adhesives, sealants Glue from spray (Consumer)	Page 106
		Adhesives Sealants (Consumer)	Page 106
	5	Air care products	Page 107
		Air care, instant action (aerosol sprays) (Consumer) Air care products Air care, continuous action (solid and liquid) (Consumer)	Page 107
	7	Anti-freeze and de-icing products	Page 108
	8	Washing car window (Consumer) Anti-freeze and de-icing products	Page 108
	9	Pouring into radiator (Consumer) Anti-freeze and de-icing products	Page 109
	10	Lock de-icer (Consumer) Coatings and paints, fillers, putties, thinners	Page 109
	11	Waterborne latex wall paint (Consumer) Coatings and paints, fillers, putties, thinners Solvent rich, high solid, water borne paint (Consumer)	Page 110
	12	Coatings and paints, fillers, putties, thinners Aerosol spray can (Consumer)	Page 110
		Coatings and paints, fillers, putties, thinners Removers (paint-, glue-, wall paper-, sealant-remover) (Consumer)	Page 111
	14	Fillers, putties, plasters, modelling clay Fillers and putty (Consumer)	Page 111
	15	Fillers, putties, plasters, modelling clay Plasters and floor equalizers (Consumer)	Page 112
	16	Fillers, putties, plasters, modelling clay Modelling clay (Consumer)	Page 112
	17	Finger paints (Consumer)	Page 113
	18	Non-metal-surface treatment products	Page 113
		Solvent rich, high solid, water borne paint (Consumer)	r uge r ro
	19	Non-metal-surface treatment products Aerosol spray can (Consumer)	Page 114
	20	Non-metal-surface treatment products	Page 114
		Removers (paint-, glue-, wall paper-, sealant-remover) (Consumer) Lubricants, greases, release products Liquids (Consumer)	Page 115

Contributing Scenarios:	22	Lubricants, greases, release products	Page 115
	22	Pastes (Consumer)	Daga 116
	23	Lubricants, greases, release products Sprays (Consumer)	Page 116
	24	Polishes and wax blends	Page 116
	27	Polishes, wax/cream (floor, furniture, shoes) (Consumer)	r age r to
	25	Polishes and wax blends	Page 117
	-	Polishes, spray (furniture, shoes) (Consumer)	- 0 -
	26	Washing and cleaning products (including solvent based products)	Page 117
		Laundry and dish washing products (Consumer)	
	27	Washing and cleaning products (including solvent based products)	Page 118
		Cleaners, liquids (all purpose cleaners, sanitary products, floor	
	00	cleaners, glass cleaners, carpet cleaners, metal cleaners) (Consumer)	D 440
	28	Washing and cleaning products (including solvent based products)	Page 118
		Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) (Consumer)	
	29	Welding and soldering products, flux products (Consumer)	Page 119
	20		r ago 110

### Contributing exposure scenario 1 Adhesives, sealants Glues, hobby use (Consumer)

### List of use descriptors

Product (Sub-)Categories:

PC1: Adhesives, sealants

### **Operational conditions**

Concentration of the substance in a mixture:	
<= 30% (unless otherwise stated)	
Duration and frequency of use:	
Covers use up to 365 d/y	
1 application per day.	
For each use event, covers use amounts up to 4 h.	
Other relevant operational conditions:	
Covers use under typical household ventilation room size of 20 m <sup>3</sup> .	

### **Exposure prediction**

Exposure estimation and reference to its source: Covers skin contact area up to 35.73 cm<sup>2</sup>. For each use event, covers use amounts up to 9 g.

### **Risk management measures**

Operational conditions and risk management measures: No specific risk management measure identified beyond those operational conditions stated.

### Contributing exposure scenario 2 Adhesives, sealants Glues DIY-use (Consumer)

### List of use descriptors

Product (Sub-)Categories:

PC1: Adhesives, sealants

### **Operational conditions**

Concentration of the substance in a mixture:

<= 30% (unless otherwise stated)

Duration and frequency of use:

Covers use up to 1 d/y 1 application per day. For each use event, covers use amounts up to 6 h. Other relevant operational conditions: Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

#### **Exposure prediction**

Exposure estimation and reference to its source:

Covers skin contact area up to 110 cm<sup>2</sup>.

For each use event, covers use amounts up to 6390 g.

### **Risk management measures**

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

### Contributing exposure scenario 3 Adhesives, sealants Glue from spray (Consumer)

### List of use descriptors

Product (Sub-)Categories:

PC1: Adhesives, sealants

### **Operational conditions**

Concentration of the substance in a mixture: <= 30% (unless otherwise stated) Duration and frequency of use: Covers use up to 6 d/y 1 application per day. For each use event, covers use amounts up to 4 h. Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

### Exposure prediction

Exposure estimation and reference to its source:

Covers skin contact area up to 35.73 cm<sup>2</sup>.

For each use event, covers use amounts up to 85.05 g.

#### **Risk management measures**

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

```
Contributing exposure scenario 4
Adhesives
Sealants (Consumer)
```

### List of use descriptors

Product (Sub-)Categories:

PC1: Adhesives, sealants

### **Operational conditions**

Concentration of the substance in a mixture: <= 30% (unless otherwise stated) Duration and frequency of use:

Covers use up to 365 d/y 1 application per day. For each use event, covers use amounts up to 1 h. Other relevant operational conditions: Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

### **Exposure prediction**

Exposure estimation and reference to its source:

Covers skin contact area up to 35.73 cm<sup>2</sup>.

For each use event, covers use amounts up to 75 g.

### **Risk management measures**

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

### Contributing exposure scenario 5

### Air care products

### Air care, instant action (aerosol sprays) (Consumer)

### List of use descriptors

Product (Sub-)Categories:

PC3: Air care products

### **Operational conditions**

Concentration of the substance in a mixture:

<= 50 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 365 d/yCovers use up to 4x/per day.

For each use event, covers use amounts up to 0.25 h.

Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

### Exposure prediction

Exposure estimation and reference to its source:

For each use event, covers use amounts up to 0.1 g.

#### **Risk management measures**

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

### Contributing exposure scenario 6 Air care products Air care, continuous action (solid and liquid) (Consumer)

### List of use descriptors

Product (Sub-)Categories:

PC3: Air care products

### **Operational conditions**

Concentration of the substance in a mixture: <= 10 % (unless otherwise stated) Duration and frequency of use: Covers use up to 365 d/y 1 application per day. For each use event, covers use amounts up to 8.0 h.

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

### **Exposure prediction**

Exposure estimation and reference to its source:

Covers skin contact area up to 35.70 cm<sup>2</sup>. For each use event, covers use amounts up to 0.48 g.

### Risk management measures

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

Contributing exposure scenario 7

### Anti-freeze and de-icing products Washing car window (Consumer)

### List of use descriptors

Product (Sub-)Categories:

PC4: Anti-freeze and de-icing products

### **Operational conditions**

Concentration of the substance in a mixture:

<= 1 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 365 d/y

1 application per day.

For each use event, covers use amounts up to 0.02 h.

Other relevant operational conditions:

Covers use in a one car garage (34m<sup>3</sup>) under typical ventilation. Covers use in room size of 34 m<sup>3</sup>. Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

### **Exposure prediction**

Exposure estimation and reference to its source:

For each use event, covers use amounts up to 0.5 g.

#### **Risk management measures**

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

Contributing exposure scenario 8

### Anti-freeze and de-icing products Pouring into radiator (Consumer)

### List of use descriptors

Product (Sub-)Categories:

PC4: Anti-freeze and de-icing products

### Operational conditions

Concentration of the substance in a mixture: <= 10 % (unless otherwise stated) Duration and frequency of use: Covers use up to 365 d/y 1 application per day. For each use event, covers use amounts up to 0.17 h.

Covers use in a one car garage (34m<sup>3</sup>) under typical ventilation. Covers use in room size of 34 m<sup>3</sup>.

### Exposure prediction

Exposure estimation and reference to its source:

Covers skin contact area up to 428 cm<sup>2</sup>.

For each use event, covers use amounts up to 2000 g.

#### **Risk management measures**

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

Contributing exposure scenario 9 Anti-freeze and de-icing products Lock de-icer (Consumer)

### List of use descriptors

Product (Sub-)Categories:

PC4: Anti-freeze and de-icing products

#### **Operational conditions**

Concentration of the substance in a mixture:

<= 50 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 365 d/y

1 application per day.

For each use event, covers use amounts up to 0.25 h.

Other relevant operational conditions:

Covers use in a one car garage (34m<sup>3</sup>) under typical ventilation. Covers use in room size of 34 m<sup>3</sup>.

### **Exposure prediction**

Exposure estimation and reference to its source:

Covers skin contact area up to 214.40 cm<sup>2</sup>.

For each use event, covers use amounts up to 4 g.

### **Risk management measures**

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

#### Contributing exposure scenario 10 Coatings and paints, fillers, putties, thinners

#### Waterborne latex wall paint (Consumer)

List of use descriptors

Product (Sub-)Categories:

PC9a: Coatings and paints, thinners, paint removers

### **Operational conditions**

Concentration of the substance in a mixture: <= 1.5 % (unless otherwise stated) Duration and frequency of use: Covers use up to 4 d/y 1 application per day.

For each use event, covers use amounts up to 2.20 h.

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

### **Exposure prediction**

Exposure estimation and reference to its source:

Covers skin contact area up to 428.75 cm<sup>2</sup>. For each use event, covers use amounts up to 2760 g.

### Risk management measures

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

Contributing exposure scenario 11

### Coatings and paints, fillers, putties, thinners Solvent rich, high solid, water borne paint (Consumer)

### List of use descriptors

Product (Sub-)Categories:

PC9a: Coatings and paints, thinners, paint removers

### **Operational conditions**

Concentration of the substance in a mixture:

<= 27.5 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 6 d/y

1 application per day.

For each use event, covers use amounts up to 2.20 h.

Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

### **Exposure prediction**

Exposure estimation and reference to its source:

Covers skin contact area up to 428.75 cm<sup>2</sup>. For each use event, covers use amounts up to 744 g.

#### **Risk management measures**

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

Contributing exposure scenario 12

### Coatings and paints, fillers, putties, thinners Aerosol spray can (Consumer)

### List of use descriptors

Product (Sub-)Categories:

PC9a: Coatings and paints, thinners, paint removers

### Operational conditions

Concentration of the substance in a mixture: <= 50 % (unless otherwise stated)

Survey Service Serv

cy of use: Covers use up to 2 d/y 1 application per day. For each use event, covers use amounts up to 0.33 h. Other relevant operational conditions:

Covers use in a one car garage (34m<sup>3</sup>) under typical ventilation. Covers use in room size of 34 m<sup>3</sup>.

#### **Exposure prediction**

Exposure estimation and reference to its source:

For each use event, covers use amounts up to 215 g.

#### **Risk management measures**

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

Contributing exposure scenario 13

## Coatings and paints, fillers, putties, thinners Removers (paint-, glue-, wall paper-, sealant-remover) (Consumer)

## List of use descriptors

Product (Sub-)Categories:

PC9a: Coatings and paints, thinners, paint removers

#### **Operational conditions**

Concentration of the substance in a mixture:

<= 50 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 3 d/y

1 application per day.

For each use event, covers use amounts up to 2 h.

Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

## **Exposure prediction**

Exposure estimation and reference to its source:

Covers skin contact area up to 857.50 cm<sup>2</sup>. For each use event, covers use amounts up to 491 g.

#### **Risk management measures**

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

Contributing exposure scenario 14

## Fillers, putties, plasters, modelling clay Fillers and putty (Consumer)

#### List of use descriptors

Product (Sub-)Categories:

PC9b: Fillers, putties, plasters, modelling clay

### Operational conditions

Concentration of the substance in a mixture: <= 2 % (unless otherwise stated) Duration and frequency of use: Covers use up to 12 d/y 1 application per day. For each use event, covers use amounts up to 4 h. Other relevant operational conditions: Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

#### **Exposure prediction**

Exposure estimation and reference to its source:

Covers skin contact area up to 35.73 cm<sup>2</sup>. For each use event, covers use amounts up to 85 g.

#### **Risk management measures**

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

Contributing exposure scenario 15

## Fillers, putties, plasters, modelling clay Plasters and floor equalizers (Consumer)

### List of use descriptors

Product (Sub-)Categories:

PC9b: Fillers, putties, plasters, modelling clay

#### **Operational conditions**

Concentration of the substance in a mixture:

<= 2 % (unless otherwise stated)

- Duration and frequency of use:
  - Covers use up to 12 d/y
    - 1 application per day.

For each use event, covers use amounts up to 2 h.

Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

#### **Exposure prediction**

Exposure estimation and reference to its source:

Covers skin contact area up to  $857.50 \text{ cm}^2$ . For each use event, covers use amounts up to 13800 g.

#### Risk management measures

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

Contributing exposure scenario 16

## Fillers, putties, plasters, modelling clay Modelling clay (Consumer)

#### List of use descriptors

Product (Sub-)Categories:

PC9b: Fillers, putties, plasters, modelling clay

#### **Operational conditions**

Concentration of the substance in a mixture: <= 1 % (unless otherwise stated) Duration and frequency of use: Covers use up to 365 d/y 1 application per day.

#### **Exposure prediction**

Exposure estimation and reference to its source:

Covers skin contact area up to 254.40 cm<sup>2</sup>.

For each use event, assumes swallowed amount of 1 g.

#### Risk management measures

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

Contributing exposure scenario 17 Finger paints (Consumer)

#### List of use descriptors

Product (Sub-)Categories:

PC9c: Finger paints

#### **Operational conditions**

Concentration of the substance in a mixture: <= 50 % (unless otherwise stated) Duration and frequency of use: Covers use up to 365 d/y 1 application per day.

#### **Exposure prediction**

Exposure estimation and reference to its source:

Covers skin contact area up to 254.40 cm<sup>2</sup>.

For each use event, assumes swallowed amount of 1.35 g.

#### **Risk management measures**

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

Contributing exposure scenario 18

# Non-metal-surface treatment products Solvent rich, high solid, water borne paint (Consumer)

## List of use descriptors

Product (Sub-)Categories:

PC15: Non-metal-surface treatment products

#### **Operational conditions**

Concentration of the substance in a mixture:

<= 27.5 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 6 d/y

1 application per day.

For each use event, covers use amounts up to 2.2 h.

Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

#### Exposure prediction

Exposure estimation and reference to its source:

Covers skin contact area up to 428.75 cm<sup>2</sup>.

For each use event, covers use amounts up to 744 g.

#### Risk management measures

Operational conditions and risk management measures:

## Non-metal-surface treatment products Aerosol spray can (Consumer)

#### List of use descriptors

Product (Sub-)Categories:

PC15: Non-metal-surface treatment products

#### **Operational conditions**

Concentration of the substance in a mixture: <= 50 % (unless otherwise stated)
Duration and frequency of use:
 Covers use up to 2 d/y
 1 application per day.
 For each use event, covers use amounts up to 0.33 h.
Other relevant operational conditions:
 Covers use in a one car garage (34m<sup>3</sup>) under typical ventilation. Covers use in room size
 of 34 m<sup>3</sup>.

#### **Exposure prediction**

Exposure estimation and reference to its source:

For each use event, covers use amounts up to 215 g.

#### **Risk management measures**

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

Contributing exposure scenario 20

# Non-metal-surface treatment products Removers (paint-, glue-, wall paper-, sealant-remover) (Consumer)

## List of use descriptors

Product (Sub-)Categories:

PC15: Non-metal-surface treatment products

## Operational conditions

Concentration of the substance in a mixture: <= 50 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 3 d/y

1 application per day.

For each use event, covers use amounts up to 2.00 h.

Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

#### **Exposure prediction**

Exposure estimation and reference to its source:

Covers skin contact area up to 857.50 cm<sup>2</sup>.

For each use event, covers use amounts up to 491 g.

#### **Risk management measures**

Operational conditions and risk management measures:

## Lubricants, greases, release products Liquids (Consumer)

# List of use descriptors

Product (Sub-)Categories:

PC24: Lubricants, greases, release products

#### **Operational conditions**

Concentration of the substance in a mixture: <= 100 % (unless otherwise stated)
Duration and frequency of use:
 Covers use up to 4 d/y
 1 application per day.
 For each use event, covers use amounts up to 0.17 h.
Other relevant operational conditions:
 Covers use in a one car garage (34m³) under typical ventilation. Covers use in room size
 of 34 m³.</pre>

## **Exposure prediction**

Exposure estimation and reference to its source: Covers skin contact area up to 468 cm<sup>2</sup>.

For each use event, covers use amounts up to 2200 g.

#### Risk management measures

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

Contributing exposure scenario 22

# Lubricants, greases, release products Pastes (Consumer)

List of use descriptors

Product (Sub-)Categories:

PC24: Lubricants, greases, release products

## **Operational conditions**

Concentration of the substance in a mixture: <= 20 % (unless otherwise stated) Duration and frequency of use: Covers use up to 10 d/y 1 application per day. Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

#### **Exposure prediction**

Exposure estimation and reference to its source:

Covers skin contact area up to 468 cm<sup>2</sup>.

For each use event, covers use amounts up to 34 g.

#### **Risk management measures**

Operational conditions and risk management measures:

# Lubricants, greases, release products Sprays (Consumer)

## List of use descriptors

Product (Sub-)Categories:

PC24: Lubricants, greases, release products

#### **Operational conditions**

Concentration of the substance in a mixture: <= 50 % (unless otherwise stated) Duration and frequency of use: Covers use up to 6 d/y 1 application per day. For each use event, covers use amounts up to 0,17 h. Other relevant operational conditions: Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

#### **Exposure prediction**

Exposure estimation and reference to its source:

Covers skin contact area up to 428.75 cm<sup>2</sup>. For each use event, covers use amounts up to 73 g.

#### Risk management measures

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

Contributing exposure scenario 24

# Polishes and wax blends Polishes, wax/cream (floor, furniture, shoes) (Consumer)

## List of use descriptors

Product (Sub-)Categories:

PC31: Polishes and wax blends

## Operational conditions

Concentration of the substance in a mixture: <= 50 % (unless otherwise stated) Duration and frequency of use:

Covers use up to 29 d/y

1 application per day.

For each use event, covers use amounts up to 1.23 h.

Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

#### **Exposure prediction**

Exposure estimation and reference to its source:

Covers skin contact area up to 430 cm<sup>2</sup>.

For each use event, covers use amounts up to 142 g.

#### **Risk management measures**

Operational conditions and risk management measures:

# Polishes and wax blends

Polishes, spray (furniture, shoes) (Consumer)

## List of use descriptors

Product (Sub-)Categories:

PC31: Polishes and wax blends

## **Operational conditions**

Concentration of the substance in a mixture: <= 50 % (unless otherwise stated) Duration and frequency of use: Covers use up to 8 d/y 1 application per day. For each use event, covers use amounts up to 0.33 h. Other relevant operational conditions: Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

# **Exposure prediction**

Exposure estimation and reference to its source:

Covers skin contact area up to 430 cm<sup>2</sup>.

For each use event, covers use amounts up to 35 g.

## **Risk management measures**

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

Contributing exposure scenario 26

# Washing and cleaning products (including solvent based products) Laundry and dish washing products (Consumer)

## List of use descriptors

Product (Sub-)Categories:

PC35: Washing and cleaning products (including solvent based products)

# Operational conditions

Concentration of the substance in a mixture: <= 5 % (unless otherwise stated) Duration and frequency of use:

Covers use up to 365 d/y

1 application per day.

For each use event, covers use amounts up to 0.50 h.

Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

# **Exposure prediction**

Exposure estimation and reference to its source:

Covers skin contact area up to 857.50 cm<sup>2</sup>.

For each use event, covers use amounts up to 15 g.

## **Risk management measures**

Operational conditions and risk management measures:

## Washing and cleaning products (including solvent based products) Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners) (Consumer)

## List of use descriptors

Product (Sub-)Categories:

PC35: Washing and cleaning products (including solvent based products)

## **Operational conditions**

Concentration of the substance in a mixture: <= 5 % (unless otherwise stated) Duration and frequency of use:

Covers use up to 128 d/y

1 application per day.

For each use event, covers use amounts up to 0.33 h.

Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

#### **Exposure prediction**

Exposure estimation and reference to its source:

Covers skin contact area up to 857.50 cm<sup>2</sup>.

For each use event, covers use amounts up to 27 g.

#### Risk management measures

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

Contributing exposure scenario 28

## Washing and cleaning products (including solvent based products) Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) (Consumer)

## List of use descriptors

Product (Sub-)Categories:

PC35: Washing and cleaning products (including solvent based products)

## **Operational conditions**

Concentration of the substance in a mixture:

<= 15 % (unless otherwise stated)

Duration and frequency of use:

Covers use up to 128 d/y 1 application per day.

For each use event, covers use amounts up to 0.17 h. Other relevant operational conditions:

Covers use under typical household ventilation room size of 20 m<sup>3</sup>.

#### Exposure prediction

Exposure estimation and reference to its source:

Covers skin contact area up to 428 cm<sup>2</sup>.

For each use event, covers use amounts up to 35 g.

#### **Risk management measures**

Operational conditions and risk management measures:

## Welding and soldering products, flux products (Consumer)

#### List of use descriptors

Product (Sub-)Categories:

PC38: Welding and soldering products (with flux coatings or flux cores), flux products

## **Operational conditions**

## Exposure prediction

Exposure estimation and reference to its source:

For each use event, covers use amounts up to 12 g.

## Risk management measures

Operational conditions and risk management measures:

No specific risk management measure identified beyond those operational conditions stated.

# Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

	Exposure scenario 24: Uses in coatings				
List of use descriptors					
Sector of uses [SU]: Product Categories:	SU21: Consumer uses PC1: Adhesives, sealants PC4: Anti-freeze and de-icing products PC5: Artists supply and hobby preparations PC9: Coatings and paints, fillers, putties, thinners PC10: Building and construction preparations not covered elsewhere PC15: Non-metal-surface treatment products PC24: Lubricants, greases, release products PC31: Polishes and wax blends				
Application					
Activities and processes Remark:	Covers the use in coatings (paints, inks, adhesives, etc) and including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, brush, spreader by hand or similar methods, and film formation) and equipment cleaning and maintenance and associated laboratory activities. Product categories [PC]: PC1, PC4, PC5, PC9, PC10, PC15, PC24, PC31				
Contributing Scenarios:	Consumer exposure and risk assessment: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'ESIG GES Consumer Tool'. This tool can be downloaded from the ESIG website: http://www.esig.org/en/regulatory-information/reach/ges-library/consumer-gess General information Page 120 Applies to all contributing exposure scenarios related to exposure scenario 24: Uses in coatings (Consumer)				

#### General information

# Applies to all contributing exposure scenarios related to exposure scenario 24: Uses in coatings (Consumer)

# List of use descriptors

Product (Sub-)Categories:

- PC4: Anti-freeze and de-icing products
- PC5: Artists supply and hobby preparations
- PC9: Coatings and paints, fillers, putties, thinners
- PC10: Building and construction preparations not covered elsewhere
- PC15: Non-metal-surface treatment products
- PC24: Lubricants, greases, release products
- PC31: Polishes and wax blends

## **Operational conditions**

•				
Product characteristics:	liquid			
	Vapour pressure: 24000 Pa			
Concentration of the substance in a mixture:				
	Unless stated differently, covers percentage substance in the product up to 100 %			
Duration and frequency of use:				
	Unless stated differently, covers frequency up to 4/d. For each use event, covers use amounts up to 8h.			
Other relevant operational conditions:				
	Assumes activities are at ambient temperature (unless stated differently). Assumes a room volume of maximum [m3]: 20 m <sup>3</sup> . Assumes use with typical ventilation			

## **Exposure prediction**

Exposure estimation and reference to its source:

Unless stated differently, covers use up to 37500 g. Covers skin contact area up to 6600 cm<sup>2</sup>. refer to GES No. 23 consumer uses

# Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

	Exposure scenario 25: Use in cleaning agents				
List of use descriptors					
Sector of uses [SU]: Product Categories:	SU21: Consumer uses PC3: Air care products PC4: Anti-freeze and de-icing products PC9: Coatings and paints, fillers, putties, thinners PC24: Lubricants, greases, release products PC32: Polymer preparations and compounds PC35: Washing and cleaning products (including solvent based products) PC38: Welding and soldering products (with flux coatings or flux cores), flux products				
Application					
Activities and processes Remark:	<ul> <li>Covers general exposures to consumers arising from the use of household products sold as washing and cleaning products, aerosols, coatings, de-icers, lubricants and air care products.</li> <li>Product categories [PC]: PC3, PC4, PC9, PC24, PC32, PC35, PC38</li> </ul>				
Contributing Scenarios:	Consumer exposure and risk assessment: Shown are the result of the quantitative exposure and risk assessment prepared based on the 'ESIG GES Consumer Tool'. This tool can be downloaded from the ESIG website: http://www.esig.org/en/regulatory-information/reach/ges-library/consumer-gess 1 General information Page 122				
	Applies to all contributing exposure scenarios related to exposure scenario 25: Use in cleaning agents (Consumer)				

## General information Applies to all contributing exposure scenarios related to exposure scenario 25: Use in cleaning agents (Consumer)

## List of use descriptors

Product (Sub-)Categories:

PC3: Air care products

- PC4: Anti-freeze and de-icing products
- PC9: Coatings and paints, fillers, putties, thinners
- PC24: Lubricants, greases, release products
- PC32: Polymer preparations and compounds
- PC35: Washing and cleaning products (including solvent based products)
- PC38: Welding and soldering products (with flux coatings or flux cores), flux products

## **Operational conditions**

Product characteristics: liquid

Vapour pressure: 24000 Pa

Concentration of the substance in a mixture:

Unless stated differently, covers percentage substance in the product up to 100 % Duration and frequency of use:

Unless stated differently, covers frequency up to 4/d. For each use event, covers use amounts up to 8h.

Other relevant operational conditions:

Assumes activities are at ambient temperature (unless stated differently). Assumes a room volume of maximum [m3]: 20 m<sup>3</sup>. Assumes use with typical ventilation

## **Exposure prediction**

Exposure estimation and reference to its source:

Unless stated differently, covers use up to 37500 g. Covers skin contact area up to 6600 cm<sup>2</sup>. refer to GES No. 23 consumer uses

# Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

# Exposure scenario 26: De-icing and anti-icing applications

## List of use descriptors

Sector of uses [SU]: Product Categories: Application	SU21: Consumer uses PC4: Anti-freeze and de-icing products	
Activities and processes Remark:	De-icing of vehicles and similar equipment by spraying. Product categories [PC]: 4	
	Consumer exposure and risk assessment: Shown are the result of the quantitative exposure and risk assessment prepared b the 'ESIG GES Consumer Tool'. This tool can be downloaded from the ESIG webs http://www.esig.org/en/regulatory-information/reach/ges-library/consumer-gess	
Contributing Scenarios:	<ol> <li>General information Applies to all contributing exposure scenarios related to exposure scenario 26: De-icing and anti-icing applications (Consumer)</li> </ol>	Page 124

## Contributing exposure scenario 1 General information Applies to all contributing exposure scenarios related to exposure scenario 26: De-icing and anti-icing applications (Consumer)

## List of use descriptors

Product (Sub-)Categories:

PC4: Anti-freeze and de-icing products

#### **Operational conditions**

Product characteristics: liquid

Vapour pressure: 24000 Pa

Concentration of the substance in a mixture:

## Unless stated differently, covers percentage substance in the product up to 100 %

Duration and frequency of use:

Unless stated differently, covers frequency up to 4/d. For each use event, covers use amounts up to 8h.

#### Other relevant operational conditions:

Assumes activities are at ambient temperature (unless stated differently). Assumes a room volume of maximum [m3]: 20 m<sup>3</sup>. Assumes use with typical ventilation

#### **Exposure prediction**

Exposure estimation and reference to its source:

Unless stated differently, covers use up to 37500 g. Covers skin contact area up to 6600 cm<sup>2</sup>. refer to GES No. 23 consumer uses

# Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES