#### according to Regulation (EC) No. 1907/2006 of the European Parliament and of the Council (REACH), as amended LACTIC ACID 80% Creation date October 24, 2013 Date of revision 07 September 2018 Version numbe 4.0 SECTION 1: Identification of the substance/mixture and of the company/undertaking LACTIC ACID 80% Product identifier 1.1 Substance / mixture Chemical name CAS Lactic acid number EC number (EINECS) 79-33-4 201-196-2 01-2119474164-39-XXXX Registration number L(+)-lactic acid, 2-hydroxypropionic acid, acid Other names of the substance 1-Hydroxyethane-1-carboxyl 1.2 Relevant identified uses of the substance or mixture and uses advised against Intended use of the substance Food/feed additives, medicinal substances, personal care, cleaning agents, biocidal products, industrial use. The product must not be used in ways other than what they are Unrecommended use of the substance listed in section 1. Chemical safety report The exposure It was processed. scenario is attached to the safety data sheet. 1.3 Details of the supplier of the safety data sheet Supplier Ekokoza s.r.o Name or business name Address Fryčovice 297, Fryčovice, 73945 Czech Republic 07508247 Identification number (IÿO) 605779993 Phone E-mail obchod@ekokoza.cz Website address www.ekokoza.cz E-mail address of the professionally qualified person responsible for the safety data sheet Name Ekokoza s.r.o E-mail obchod@ekokoza.cz 1.4 Telephone number for emergencies Clinic for occupational diseases, Toxicology Information Center (TIS), Na Bojišti 1, 128 08 Prague 2, 224 919 293 or 224,915,402 **SECTION 2: Hazards identification** 2.1 Classification of the substance or mixture Classification of the substance according to Regulation (EC) No. 1272/2008 The substance is classified as dangerous. Skin Irritation. 2, H315 Eye Dam. 1, H318 The full text of all classifications and H-phrases is given in section 16. The most serious adverse effects on human health and the environment Causes serious eye damage. It irritates the skin. 2.2 Marking elements Danger warning symbol Signal word

Danger

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Hazardous substance

Lactic acid (EC: 201-196-2; CAS: 79-33-4)



according to Regulation (EC) No. 1907/2006 of the European Parliament and of the Council (REACH),

### as amended

		LAC	TIC ACID 80%		
	on date	October 24, 2013			
Date of	f revision	07 September 2018	Version number	4.0	
	Standard hazard state	ments			
	H315	It irritates the skin.			
	H318 <sub>Causes</sub> serious eye	damage.			
	Instructions for safe h	andling			
	P280	Use safety glasses.			
	P302 HP362SKIN: Wash w	vith plenty of soap and water.			
	P305+P351+P338	IF IN EYES: Rinse carefully with	water for several minutes. Remove contact	lenses, if present	
	and the second se	fitted and if they can be removed	l easily. Continue rinsing.		
	P310	Call a doctor immediately.			
	P332+P313	In case of skin irritation: Seek me	edical attention/treatment.		
	P362+P364	Remove contaminated clothing a	and wash before reuse.		
2.3	Another danger				
	The substance does no wording.	t meet the criteria for PBT or vPvB sub	stances in accordance with Annex XIII, Reg	ulation (EC) No. 1907/2006 (REAC	H) in force

#### **SECTION 3: Composition/information on ingredients**

#### 3.1 Substances

#### Chemical characteristics

The substance belo	OW.			
Identification numbers	Substance name	Content in % weight	Classification according to regulation (EC) no. 1272/2008	Note
CAS: 79-33-4 EC: 201-196-2	the main component of a substance Lactic acid	>76	Skin Irritation. 2, H315 Eye Dam. 1, H318	
Registration number: 01-2119474164-39- XXXX				

The full text of all classifications and H-phrases is given in section 16.

#### SECTION 4: First aid measures

#### 4.1 Description of first aid

Take care of your own safety. In case of health problems or in case of doubt, inform the doctor and provide him information from this Safety Data Sheet.

#### When inhaled

Stop the exposure immediately, move the victim to fresh air.

#### In contact with skin

Put away the stained clothing. Wash the affected area with plenty of lukewarm water if possible. If there was no injury skin, it is also advisable to use soap, soap solution or shampoo. Get medical treatment if skin irritation persists.

#### On contact with the eyes

Immediately flush the eyes with a stream of running water, open the eyelids (perhaps by force); if the affected person wears contact lenses, remove them immediately. Do not neutralize under any circumstances! Rinse for 10-30 minutes from the inner corner to externally so that the other eye is not affected. Get medical treatment as soon as possible. Each and every person must be sent for examination in case of a small impact.

#### When ingested

DO NOT INDUCE VOMITING! Rinse the oral cavity with water and drink 2-5 dl of water. For a person who has health problems, get medical treatment.

#### 4.2 Most important symptoms and effects, both acute and delayed

When inhaled

Inhalation of vapors may cause burns to the respiratory tract.

In contact with skin

It irritates the skin.

On contact with the eyes

Causes serious eye damage.

#### When ingested

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Digestive tract irritation may occur.

according to Regulation (EC) No. 1907/2006 of the European Parliament and of the Council (REACH),

# as amended

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4.3 Indiantian of any	immediate medical attention and anonial	treatment needed		

#### Indication of any immediate medical attention and special treatment needed not specified

#### SECTION 5: Firefighting measures

5.1	Fire extinguishers
	Suitable extinguishing agents
	Foam resistant to alcohol, carbon dioxide, powder, water jet, water mist.
	Unsuitable fire extinguishers
	Water - full flow.
5.2	Special hazards arising from the substance or mixture
	In case of fire, toxic gases may be produced. Inhalation of dangerous decomposition (pyrolysis) products can cause serious damage to health.
5.3	Instructions for firefighters
	Use self-contained breathing apparatus and a full-body protective suit. Do not let the contaminated fire extinguishing agent escape into the sewer, surface and groundwater.

#### SECTION 6: Accidental release measures

SECH	ON 6: Accidental release measures
6.1	Personal protection measures, protective equipment and emergency procedures
	Use personal protective work equipment. Follow the instructions in Sections 7 and 8.
6.2	Environmental protection measures
	Avoid soil contamination and release to surface or ground water.
6.3	Methods and material for containment and cleaning up
	Cover spilled product with suitable absorbent material (sand, diatomaceous earth, earth, universal absorbents), collect in well-closed containers and dispose of according to section 13. In case of spillage of large quantities of product, notify the fire brigade and others competent authorities. After removing the product, wash the contaminated area with plenty of water.
6.4 Re	ference to Other Sections
	See section 7, 8 and 13.

#### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Do not inhale aerosols. Use personal protective work equipment according to the section 8. Pay attention to the applicable legal regulations on safety and health protection.

 7.2 Conditions for safe storage of substances and mixtures, including incompatible substances and mixtures Store in tightly closed containers in cool, dry and well-ventilated places designated for this purpose.
 Specific requirements or rules related to the substance/mixture They are not fixed

### 7.3 Specific end/specific end uses

not specified

8.1

#### SECTION 8: Exposure controls/personal protection

**Control parameters** 

none

#### 8.2 Limiting Exposure

Observe the usual health protection measures at work and especially good ventilation. This can only be achieved by locals exhaust or effective general ventilation. Do not eat, drink or smoke while working. After work and before a meal break a wash your hands thoroughly with soap and water.

#### Eye and face protection

Safety glasses or a face shield (depending on the nature of the work performed).

#### Skin protection

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Hand protection: Protective gloves resistant to the product. Follow the recommendations of the specific glove manufacturer when choosing a suitable one thickness, material and permeability. Follow the manufacturer's other recommendations. Other protection: Protective work clothing. When polluted wash your skin thoroughly.



Information on basic physical and chemical properties         liquid       Viscous         stype aroline at 20°C       Yellowish to yellow         odor       the data is not available         odor       the data is not available         odor       the data is not available         odor threshold pH metting       2 (undiluted at 25°C)         point / freezing point initial       the data is not available         boiling point and boiling point range flash point       110-130 °C         evaporation       the data is not available         gases) upper/lower flammability or       Not applicable.         explosive limits       the data is not available         explosion limits       the data is not available         explosity relative density       1.10 - 1.25 (water = 1)         solubility </th
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solubility     fully miscible       water solubility fat solubility     fully miscible       partition coefficient: n-     the data is not available       octanol/water autoignition temperature decomposition     -0.62
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partition coefficient: n-     the data is not available       octanol/water autoignition temperature decomposition     -0.62
octanol/water autoignition temperature decomposition -0.62
temperature viscosity the data is not available the data is not available
5-60 mPa.s
explosive properties It is not explosive.
oxidizing properties It has no oxidizing properties.
.2 More information
density 1.10-1.25 g/cm3
ignition temperature 400°C
1000

They do not arise under normal use. At high temperatures and in case of fire, dangerous products such as oxide are formed carbon dioxide and carbon dioxide.

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SECTION 11: Toxicologic				
11.1 Information on toxic	-			
No toxicological o	lata are available for the substance.			
Acute toxicity				
Based on the ava	ilable data, the classification criteria are	e not met.		
Skin corrosion/i	rritation			
It irritates the skin.				
Serious eye dam	age / eye irritation			
Causes serious e	ye damage.			
Respiratory sen	sitization / skin sensitization			
Based on the ava	ilable data, the classification criteria are	e not met.		
Germ cell mutag	jenicity			
Based on the ava	ilable data, the classification criteria are	e not met.		
Carcinogenicity				
Based on the ava	ilable data, the classification criteria are	e not met.		
Reproductive to:	xicity			
Based on the ava	ilable data, the classification criteria are	e not met.		
Specific target o	rgan toxicity - single exposure			
Based on the ava	ilable data, the classification criteria are	e not met.		
Specific target o	rgan toxicity - repeated exposure			
Based on the ava	ilable data, the classification criteria are	e not met.		

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

# SECTION 12: Ecological information 12.1 Toxicity

#### Acute toxicity

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

12.2 Persistence and Deployability

#### Biodegradability

#### Lactic acid

Parameter	Value	Exposure time	Environment	Result
BOD	0.45 mg/kg	5 day		
BOD	0.6 mg/kg	20 day		
COD	0.9 mg/kg			

Biochemical oxygen demand (BOD): 0.45 mg/mg, incubation time: 5 d; 0.6 mg/mg, incubation period: 20 d Chemical oxygen demand (COD): 0.9 mg/mg

#### 12.3 Bioaccumulative potential

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The product is miscible with water and easily biodegradable in water and soil. Accumulation in the organism is not expected.

#### 12.4 Mobility in soil

according to Regulation (EC) No. 1907/2006 of the European Parliament and of the Council

(REACH), as amended

 Creation date
 24 October 2013

 Date of revision
 07 September 2018
 Version number

 Not listed.
 Version of PBT and vPvB assessment
 Version number

The product does not contain substances meeting the criteria for PBT or vPvB substances in accordance with Annex XIII, Regulation (EC) no. 1907/2006 (REACH) as amended.

12.6 Other adverse effects Not specified.

#### SECTION 13: Disposal instructions 13.1 Waste

#### management methods Risk of environmental

contamination, proceed according to Act No. 185/2001 Coll. on waste, as amended, and according to implementing regulations on waste disposal. Follow the applicable waste disposal regulations. Place the unused product and the contaminated packaging in marked containers for waste collection and hand it over to an authorized person for waste disposal (a specialized company) that is authorized for this activity. Do not pour the unused product down the drain.

It must not be disposed of together with municipal waste. Empty packaging can be used for energy in a waste incinerator or stored in a landfill of the appropriate classification. Perfectly cleaned packaging can be sent for recycling.

#### Legal regulations on waste Act No.

185/2001 Coll., on waste, as amended. Decree No. 383/2001 Coll., on the details of waste management, as amended. Decree No. 93/2016 Coll., (waste catalog) as amended. Decree No. 94/2016 Coll., on the assessment of hazardous waste properties, as amended.

SECTION 14: Transport information 14.1 UN number Not subject to	
ADR regulations.	
14.2 Official (UN) shipping name not given	
14.3 Transport hazard class(es).         not specified         14.4 Packaging group not specified	
14.5 Environmental hazard not specified	
14.6 Special precautions for user Reference in sections 4 to 8.	10.0
14.7 Bulk transport according to Annex II of the MARPOL Convention and the IBC Regulation not specified	

#### SECTION 15: Regulatory information 15.1 Safety,

health and environmental regulations/substance-specific legislation or

#### mixtures

Regulation of the European Parliament and of the Council (EC) No. 1907/2006 of 18 December 2006 on the registration, evaluation, authorization and restriction of chemical substances, on the establishment of the European Chemicals Agency, on the amendment of Directive 1999/45/EC and on the repeal of the Regulation Council (EEC) No. 793/93, Commission Regulation (EC) No. 1488/94, Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000 /21/EC as amended. Regulation of the European Parliament and of the Council (EC) No. 1272/2008 of 16 December 2008 on the classification, labeling and packaging of substances and mixtures, on the amendment and repeal of Directives 67/548/EEC and 1999/45/EC and on the amendment of the Regulation (EC) No. 1907/2006 as amended. Act No. 350/2011 Coll., on Chemical Substances and Chemical Mixtures and on Amendments to Certain Acts (Chemical Act). Act No. 258/2000 Coll., on the protection of public health as amended. Government Regulation No. 361/2007 Coll., which establishes the conditions for health protection Act as amended. Decree No. 415/2012 Coll., on the premissible level of pollution and its determination and on the implementation of some other provisions of the Air Protection Act as amended. Act No. 185/2001 Coll., on classifying work into categories, the limit values of indicators of biological exposure tests, the conditions for sampling biological material for carrying out biological exposure tests and the requirements for reporting work with asbestos and biological agents, as amended.

15.2 Chemical safety assessment It has been carried out.

#### **SECTION 16: Further information**

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4.0

according to Regulation (EC) No. 1907/2006 of the European Parliament and of the Council (REACH), as amended

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Creation Date of r		October 24, 2013 07 September 2018	Version number	4.0
	List of standard hazard H315	I statements used in the safety data sheet It irritates the skin.		
	H318	Causes serious eye damage.		
	-	structions used in the safety data sheet		
	P280	Use safety glasses.		
	P305+P351+P338	IF IN EYES: Rinse carefully with water f fitted and if they can be removed easily.		enses, if present
	P310	Call a doctor immediately.		
	P302+P352	IF ON SKIN: Wash with plenty of soap a		
	P332+P313	In case of skin irritation: Seek medical a		
	P362+P364	Remove contaminated clothing and was	sh before reuse.	
		important from the point of view of safety a		
	is responsible for complia	ithout the special consent of the manufacturer, ance with all relevant health regulations.		er than that specified in section 1. User
	•	ns and acronyms used in the safety data sh		
	ADR	European agreement on the internation	al transport of dangerous goods by roa	ad
	BCF	Bioconcentration factor		
	TIME	Chemical Abstracts Service		
	CLP	Regulation (EC) No. 1272/2008 on classif		tances and mixtures
	TODAY	The derived level at which no adverse e		
	ECÿÿ	The concentration of a substance at which		
	EINECS	European list of existing traded chemica	al substances	
	EmS	Contingency plan		
	EC	The EC number is the numerical identifier	r of substances on the EC list	
	EU	European Union		
	IATA	International Air Transport Association		
	IBC	International Code for the Construction	and Equipment of Ships Carrying Haz	ardous Chemicals in Bulk
	ІСўў	Concentration causing 50% blockade		
	ICAO	International Civil Aviation Organization		
	IMDG	International maritime transport of dang	erous goods	and the second se
	INCI	International nomenclature of cosmetic	ingredients	
	ISO	International Organization for Standardi	zation	
	IUPAC	International Union of Pure and Applied	Chemistry	
	LCÿÿ	Lethal concentration of a substance that	t can be expected to cause the death	of 50% of the population
	LDÿÿ	Lethal dose of a substance that can be	expected to cause the death of 50% o	of the population
	LOAEC	The lowest concentration with an observ	ved adverse effect	
	LOAEL	The lowest dose with an observed adve	erse effect	
	log Kow	Octanol-water partition coefficient		
	MARPOL	International Convention for the Prevent	tion of Pollution from Ships	
	NOAEC	Concentration with no observed adverse	e effect	
	NOAEL	No-observed-adverse-effect dose value		
	NOEC	Concentration without observed effects		
	CHRISTMAS	No-observed-effect dose value		
	NPK	The highest permissible concentration		and the second se
	OEL	Exposure limits in the workplace		
	PBT	Persistent, bioaccumulative and toxic		
	PEL	Permissible exposure limit		
	PNEC	An estimate of the concentration at which	ch no adverse effects occur	
	ppm	Number of particles per million (millionth	h)	
	REACH	Registration, evaluation, authorization a		
	RID	Agreement on the transport of dangerou		
	UN	The four-digit identification number of th		UN Model Regulations
	UVCB	Substance of unknown or variable comp material		-
	VOCs	Volatile organic compounds		
	vPvB	Highly persistent and highly bioaccumul	ative	

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Made in the SBLCore 2019 application (19.2.14) www.sblcore.cz



according to Regulation (EC) No. 1907/2006 of the European Parliament and of the Council (REACH),

## 

	LACI	FIC ACID 80%		
Creation date	October 24, 2013			
Date of revision	07 September 2018	Version number	4.0	
Eye Dam.	Serious eye damage			
Skin Irritation.	Skin irritation			
Training Guidelin	es			
	Familiarize workers with the recommended method of use, mandatory protective equipment, first aid and prohibited items manipulations with the mixture.			
Recommended us not specified	Recommended use restrictions			
Information on da	ta sources used in compiling the safety o	lata sheet		
•	uropean Parliament and of the Council (EC)			
· · ·	272/2008 as amended. Act No. 350/2011 Co for providing first aid in case of exposure to			
U 1	Sc. MUDr. Miroslava Horavchová CSc. MI	,		

Alexandr Fuchs, CSc., MUDr. Miroslava Hornychová, CSc., MUDr. Zdeÿka Trávníÿková, CSc., Jiÿina Fridrichovská, prom. chem.). Data from the manufacturer of the substance/mixture, if available - data from the registration documentation.

#### Changes made (which information was added, deleted or modified)

Version 4.0 replaces the BL version from 08/08/2018. Changes have been made in all sections.

#### Declaration

The safety data sheet contains information to ensure safety and health protection at work and environmental protection. Listed the data correspond to the current state of knowledge and experience and are in accordance with applicable legal regulations. They can't be considered as a guarantee of suitability and usability of the product for a specific application.



L(+)-Lactic Acid

. Short title of Exposure Scena	rio: (Ref.: 1) Use in agriculture, forestry, fisheries
Main User Groups	: SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Sectors of end-use	: SU1: Agriculture, forestry, fisheries SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Chemical product category	: PC9a: Coatings and paints, thinners, paint removers PC12: Fertilizers
	PC15: Non-metal surface treatment products PC20: Products such as pH-regulators, flocculants, precipitants, neutralization agents PC21: Laboratory chemicals
Process categories	<ul> <li>PROC3: Use in closed batch process (synthesis or formula- tion)</li> <li>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</li> </ul>
	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
Environmental Release Categorie	es : ERC2: Formulation of preparations ERC4: Industrial use of processing aids in processes and products, not becoming part of articles ERC8a: Wide dispersive indoor use of processing aids in open systems ERC9a: Wide dispersive indoor use of substances in closed systems
2.1 Contributing scenario contro ERC9a: Formulation of preparat products, not becoming part of a open systems, Wide dispersive i	tions, Industrial use of processing aids in processes and
Product characteristics Concentration of the Substance ir Mixture/Article	<ul> <li>Covers the percentage of the substance in the product up to 100% (unless stated differently).</li> </ul>
mount used EU tonnage	: 58000 t/a

SAFETY DAT according to Regulation									
L(+)-Lactic A	cid	Revision [	Date: 24/07/2017						
Remarks			: No RMMs applicable. No hazard to the environment. Envi- ronmental exposure assessment for this scenario is not relevant.						
2.2 Contributing s PROC15: Use in ( (synthesis) where (charging/ dischar substance or prep laboratory re ager	closed batch proc opportunity for ex ging) from/ to ves paration into small	ess (synthes cposure arise sels/ large co	is or formulatior es, Transfer of su ontainers at dedi	n), Use in bat ub- stance or icated facilitie	ch and other p preparation es, Transfer of	orocess			
Product characteristics Concentration of th Mixture/Article			he percentage of the (unless stated differe		e product up to				
Technical conditions a Ensure adequate ve	nd measures ntilation, especially in	confined areas.	Avoid temperatures	above 200°C.					
Organizational measu Do not eat, drink or s	res to prevent/limit rele smoke when using this			and exposure /e and wash con	taminated clothing	j before re-use.			
Conditions and measu Breathing apparatus Rubber gloves Face-shield Boots Chemical resistant a sleeved clothing	only if aerosol or dust		ion, hygie	ene and health e	valuation				
Notes Local effects Risk Management M	leasures are based or	ı qualitative risk	characterization.						
3. Exposure estim	nation and referen	ce to its sour	ce						
Environment									
Contributing Scenario	Exposure Assessment	Specific conditions	Compartment Valu	e	Level of Exposure	RCR			

according to Regulation (EC) No. 1907/2006

## L(+)-Lactic Acid

L(+)-Lactic	; Acid				
Version 2.0		Revision Date: 24/07	/2017		
	Method				
	Qualitative approach used to conclude safe use.	All com	partments		
Remarks: Environ No hazard to the e		ent for this scenario is not re	elevant.	·	
Vorkers					
Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Expo- sure	RCR
All PROCs Quali	tative approach used to conclude safe use.				
All PROCs	: All PROCs n	nentioned in section 1.			
4. Guidance to D	ownstream User to eval	luate whether he works ir	nside the boundarie	es set by the Exposure	e Scenario
o his use. f other OC/RMM a	re adopted, the user shoul	ld ensure that risks are man	aged to at least equiv	ralent levels.	

L(+)-Lactic Acid

1. Short title of Exposure Scenario: (	(Ref.: 2) Use in mining					
Main User Groups	: SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)					
Sectors of end-use	<ul> <li>SU2a: Mining, (without offshore industries) SU2b: Offshore industries</li> <li>SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)</li> </ul>					
Process categories	: PROC2: Use in closed, continuous process with occasional controlled exposure					
Environmental Release Categories :	ERC2: Formulation of preparations ERC4: Industrial use of processing aids in processes and products, not becoming part of articles					
2.1 Contributing scenario controlling tion of preparations, Industrial use of becoming part of articles						
Product characteristics						
Concentration of the Substance in Mixture/Article	: Covers the percentage of the substance in the product up to 100% (unless stated differently).					
Amount used						
EU tonnage	: 58000 t/a					
Technical conditions and measures / Or Remarks	ganizational measures : No RMMs applicable. No hazard to the environment. Envi- ronmental exposure assessment for this scenario is not relevant.					
2.2 Contributing scenario controlling process with occasional controlled e						
Product characteristics Concentration of the Substance in Mixture/Article	: Covers the percentage of the substance in the product up to 100% (unless stated differently).					
Technical conditions and measures Ensure adequate ventilation, especiall	y in confined areas. Avoid temperatures above 200°C.					

according to Regulation (EC) No. 1907/2006

### L(+)-Lactic Acid

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Organizational measures to prevent/limit releases, dispersion and exposure Do not eat, drink or smoke when using this product. Avoid skin contact. Remove and wash contaminated clothing before re-use.

ion, hygiene and health evaluation

Conditions and measures related to personal protection Breathing apparatus only if aerosol or dust is formed. Rubber gloves Face-shield Boots Chemical resistant apron Long sleeved clothing

Notes

Local effects

Risk Management Measures are based on qualitative risk characterization.

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment Value	e	Level of Exposure	RCR
	Qualitative		All compartments			
	approach used to conclude safe					
	use.					
Remarks: Environmer No hazard to the envi	ntal exposure assessme ronment.	ent for this scena	rio is not relevant.			

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Expo- sure	RCR
All PROCs Qual	tative approach used to conclude safe use.				
All PROCs	: All PROCs m	entioned in section 1.			

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

# L(+)-Lactic Acid

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The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit his use.

L(+)-Lactic Acid Version 2.0

Version 2.0	Revision Date. 24/07/2017
1. Short title of Exposure Scenario:	(Ref.: 3) Use in mining (without offshore industries)
Main User Groups	: SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Sectors of end-use	<ul> <li>SU2a: Mining, (without offshore industries)</li> <li>SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites</li> <li>SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)</li> </ul>
Chemical product category	: PC37: Water treatment chemicals
Process categories	: PROC2: Use in closed, continuous process with occasional controlled exposure
Environmental Release Categories:	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
•	g environmental exposure for: ERC4: Industrial use of products, not becoming part of articles
Product characteristics Concentration of the Substance in Mixture/Article	: Covers the percentage of the substance in the product up to 100% (unless stated differently).
Amount used EU tonnage	: 58000 t/a
Technical conditions and measures / C Remarks	Drganizational measures : No RMMs applicable. No hazard to the environment. Envi- ronmental exposure assessment for this scenario is not relevant.
2.2 Contributing scenario controllin process with occasional controlled	•
Product characteristics Concentration of the Substance in Mixture/Article	: Covers the percentage of the substance in the product up to 100% (unless stated differently).
Technical conditions and measures Ensure adequate ventilation, especia	ally in confined areas. Avoid temperatures above 200°C.

according to Regulatior L(+)-Lactic A Version 2.0							
	cid						
/ersion 2.0	CIU						
10101011 2.0		Revision I	Date: 24/07/2017	,			
Organizational measure Do not eat, drink or s	es to prevent/limit relea moke when using this			sion and exp ove and was		nated clothing bef	ore re-use.
Rubber gloves Face-shield Boots Chemical resistant ap sleeved clothing Notes Local effects	only if aerosol or dust i	is formed.		hygiene and	health eva	aluation	
	motion and rafa	rongo to ito	001/200				
3. Exposure esti	mation and rele	rence to its	source				
Environment							
Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value		Level of Exposure	RCR
	Qualitative approach used to conclude safe use.		All compartm	ents			
Remarks: Environmen No hazard to the envir		ent for this scena	ario is not relevar	nt.			
Workers							
Contributing Scenario As	Exposure sessment Method	Specific condit	ions	Value	Le	vel of Expo- sure	RCR
All PROCs Qual tativ	e approach used o conclude safe						

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4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

The immediate downstream user is required to evaluate whether the

operational conditions and risk management measures described in the exposure scenario fit his use.

L(+)-Lactic Acid

short title of Exposure Scenario. (r	Ref.: 4) Industrial manufacturing without subsequent relevant service life
Main User Groups	: SU 3: Industrial uses: Uses of substances as such or in preparations at industria sites
Sectors of end-use	: SU 3: Industrial uses: Uses of substances as such or in preparations at industria sites
Chemical product category	: PC1: Adhesives, sealants
	PC3: Air care products
	PC4: Anti-Freeze and de-icing products
	PC8: Biocidal products (eg Disinfectants, pest control)
	PC9a: Coatings and paints, thinners, paint removers PC9b: Fillers,
	putties, plasters, modeling clay
	PC9c: Finger paints
	PC14: Metal surface treatment products, including galvanic and electroplating
	products
	PC15: Non-metal surface treatment products
	PC20: Products such as pH-regulators, flocculants, precipitants, neutralization
	agents PC21: Laboratory chemicals
	PC21: Laboratory chemicals PC24: Lubricants, greases, release products
	PC25: Metal working fluids
	PC31: Polishes and wax blends
	PC35: Washing and cleaning products (including solvent based products)
	PC38: Welding and soldering products (with flux coatings or flux cores.), flux products
Process categories	: 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 formula-tion)
	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
	PROC11: Non industrial spraying
	PROC13: Treatment of articles by dipping and pouring
	PROC14: Production of preparations or articles by tabletting,

	00
L(+)-Lactic Acid	
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	compression, extrusion, pelletisation PROC15: Use as laboratory reagent PROC16: Using material as fuel sources, limited exposure to unburned product to be expected PROC17: Lubrication at high energy conditions and in part open process PROC18: Greasing at high energy conditions PROC19: Hand-mixing with intimate contact and only PPE available
	PROC20: Heat and pressure transfer fluids in dispersive, professional use but closed systems PROC24: High (mechanical) energy work-up of substances bound in materials and/or articles
	PROC26: Handling of solid inorganic substances at ambient temperature
Environmental Release Categories : EF	<ul> <li>RC2: Formulation of preparations</li> <li>ERC4: Industrial use of processing aids in processes and products, not becoming part of articles</li> <li>ERC5: Industrial use resulting in inclusion into or onto a matrix</li> <li>ERC6b: Industrial use of reactive processing aids</li> <li>ERC7: Industrial use of substances in closed systems</li> <li>ERC8a: Wide dispersive indoor use of processing aids in open systems</li> <li>ERC8d: Wide dispersive outdoor use of processing aids in open systems</li> <li>ERC8d: Wide dispersive outdoor use of processing aids in open systems</li> <li>ERC8d: Wide dispersive outdoor use of reactive substances in open systems</li> <li>ERC8e: Wide dispersive outdoor use of reactive substances in open systems</li> <li>ERC9a: Wide dispersive indoor use of substances in closed systems</li> <li>ERC9a: Wide dispersive outdoor use of substances in closed systems</li> <li>ERC9a: Wide dispersive outdoor use of substances in closed systems</li> </ul>
ERC7, ERC8a, ERC8b, ERC8d, ERC8 use of processing aids in process es ar resulting in inclusion int o or onto a mat of substances in closed systems, Wide Wide dispersive indoor use of reactive of processing aids in open systems, Wi	vironmental exposure for: ERC2, ERC4, ERC5, ERC6b, e, ERC9a, ERC 9b: Formulation of preparations, Industrial ad products, not becoming part of articles, Industrial use rix, Industrial use of reactive processing aids, Industrial use dispersive indoor use of processing aids in open systems, substances in open systems, Wide dispersive outdoor use de dispersive outdoor use of reactive substances in open substances in closed systems substances in closed ms, Wide dispersive outdoor use of
Product characteristics Concentration of the Substance in Mixture/Article	: Covers the percentage of the substance in the product up to 100% (unless stated differently).
Amount used EU tonnage	: 58000 t/a
of substances in closed systems, Wide Wide dispersive indoor use of reactive of processing aids in open systems, Wi systems, Wide dispersive indoor use of systems Product characteristics Concentration of the Substance in Mixture/Article Amount used	dispersive indoor use of processing aids in open systems, substances in open systems, Wide dispersive outdoor use de dispersive outdoor use of reactive substances in open substances in closed systems substances in closed ms, Wide dispersive outdoor use of : Covers the percentage of the substance in the product up to 100% (unless stated differently).

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Version 2.0	Revision Date: 24/07/2017
Technical condition Remarks	ons and measures / Organizational measures : No RMMs applicable. No hazard to the environment. Envi- ronmental exposure assessment for this scenario is not relevant.
PROC5, PROC6 PROC15, PROC process, no likel exposure, Use ir (synthesis) when formulation of p operation stance from/ dedicated vessels/ large co containers ( ded ndustrial sprayir or articles by tab Using material a Lubrication at hig conditions, Hand transfer fluids in systems, High (r	scenario controlling worker exposu re for: PROC1, PROC2, PROC3, PROC4, 5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC14, 216, PROC17, PROC18, PROC19, PROC20, PROC24, PROC26: Use in closed ihood of exposure, U se in closed, continuous process with occasional controlled a closed batch process (synthesis or formulation), Use in batch and other process e op portunity for exposure arises, Mixing or blending in batch processes for reparations and articles (multistage s, Industrial spraying, Transfer of sub-to vessels/ large containers at non- arration (charging/ discharging) facilities, Transfer of substance or prep- intainers at dedicated facilities, small cated filling line, including ing, Non g, Treatment of articles preparations letting, compression atory reagent, s fuel sources, limi expected, gh energy conditions and high energy i-mixing with intimate c and pressure dispersive, professional use but closed nechanical) energy work-up of substances bound in materials and/or articles, l inorganic substances at ambient temperatur e
Product characte Concentration Mixture/Article	ristics of the Substance in : Covers the percentage of the substance in the product up to 100% (unless stated differently).
	ons and measures re ventilation, especially in confined areas. Avoid temperatures above 200°C.
-	easures to prevent/limit releases, dispersion and exposure k or smoke when using this product. Avoid skin contact. Remove and wash contaminated re-use.
	easures related to personal protection ion, hygiene and health evaluation ratus only if aerosol or dust is formed.

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#### Boots

Chemical resistant apron Long-sleeved clothing

Notes

Local effects

Risk Management Measures are based on qualitative risk characterization.

3. Exposure estimation and reference to its source

#### Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartn	nent Valu	\$	Level of Exposure	RCR
	Qualitative approach used to conclude safe use.		All comp	artments			
	Remarks: Environmental exposure assessment for this scenario is not relevant. No hazard to the environment.						
Workers							
Contributing Scenario	Exposure Assessment Method	Specific conditi	ons	Va	lue L	Level of Exposure	RCR
All PROCs Qual	tative approach used to conclude safe						

All PROCs

: All PROCs mentioned in section 1.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

The immediate downstream user is required to evaluate

use.

whether the operational conditions and risk management measures described in the exposure scenario fit to his use.

L(+)-Lactic Acid

Main User Groups	: SU 3: Industrial uses: Uses of substances as such or in preparations at industria sites
Sectors of end-use	: SU 3: Industrial uses: Uses of substances as such or in preparations at industria sites
Chemical product category	: PC9a: Coatings and paints, thinners, paint removers PC9b: Fillers, putties, plasters, modeling clay PC9c: Finger paints PC35: Washing and cleaning products (including solvent based products)
Process categories	: 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
	PROC10: Roller application or brushing PROC11: Non industrial spraying
Article categories	: AC1: Vehicles
Environmental Release Categories: ERC4:	Industrial use of processing aids in processes and products, not becoming part of articles ERC5: Industrial use resulting in inclusion into or onto a matrix
.1 Contributing scenario controlling enviro	
clusion into or onto a matrix	
Product characteristics Concentration of the Substance in Mixture/Article	: Covers the percentage of the substance in the product up to 100% (unless stated differently).
mount used	
EU tonnage	: 58000 t/a
echnical conditions and measures / Organiza Remarks	tional measures : No RMMs applicable. No hazard to the environment. Environmental exposure

## L(+)-Lactic Acid

Version 2.0 Revision Date: 24/07/2017 2.2 Contributing scenario controlling worker exposure for: PROC5, PROC7, PROC8a, PROC8b, PROC10, PROC11: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact), Industrial spraying, Transfer of substance or preparation (charging/dis charging) from/ to vessels/ large con-tainers at non-dedicated facilities, Transfer of su bstance or preparation (charging/ dis-charging) from/ to vessels/ large containers at dedicated facilities, Roller application or brushing, Non-industrial spraying Product (article) characteristic Remarks : Covers the percentage of the substance in the product up to 100% (unless stated differently). Technical conditions and measures Ensure adequate ventilation, especially in confined areas. Avoid temperatures above 200°C. Organizational measures to prevent/limit releases, dispersion and exposure Do not eat, drink or smoke when using this product. Avoid skin contact. Remove and wash contaminated clothing before re-use. Conditions and measures related to personal protection ion, hygiene and health evaluation Breathing apparatus only if aerosol or dust is formed. Rubber gloves Face-shield Boots Chemical resistant apron Long sleeved clothing Notes Local effects Risk Management Measures are based on qualitative risk characterization. 3. Exposure estimation and reference to its source Environment Contributing Level of RCR Specific Compartment Value Exposure Scenario Assessment conditions Exposure Method Qualitative All compartments approach used

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according to Regulation (EC) No. 1907/2006									
	L(+)-Lactic Acid Version 2.0 Revision Date: 24/07/2017								
	to conclude safe use.								
Remarks: Environmental exposure assessment for this scenario is not relevant. No hazard to the environment.									
Workers									
Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Expo- sure	RCR				
All PROCs Qua	itative approach used to conclude safe use.								
All PROCs	: All PROCs I	mentioned in section 1.							
4. Guidance to D	ownstream User to eva	luate whether he works ir	nside the bounda	ries set by the Exposure	Scenario				
to his use.		nanagement measures des uld ensure that risks are ma							

L(+)-Lactic Acid

Version 2.0	Revision Date: 24/07/2017
1. Short title of Exposure Scenario: (Ref.: 6) N	Nanufacture of pulp, paper and paper products
Main User Groups	: SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	: SU6b: Manufacture of pulp, paper and paper products
Process categories	: PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises
Environmental Release Categories :	ERC1: Manufacture of substances
2.1 Contributing scenario controlling environm	nental substances exposure for: ERC1: Manufacture of
Product characteristics	
Concentration of the Substance in Mixture/Article	: Covers the percentage of the substance in the product up to 100% (unless stated differently).
Amount used	50000 //
EU tonnage	: 58000 t/a
Technical conditions and measures / Or Remarks	ganizational measures : No RMMs applicable. No hazard to the environment. Envi- ronmental exposure assessment for this scenario is not relevant.
2.2 Contributing scenario controlling worker e (synthesis) where opportunity for exposu	xposu er process re for: PROC4: Use in batch and other-re arises
Product characteristics Concentration of the Substance in Mixture/Article	: Covers the percentage of the substance in the product up to 100% (unless stated differently).
Technical conditions and measures Ensure adequate ventilation, especiall	ly in confined areas. Avoid temperatures above 200°C.
Organizational measures to prevent/limi Do not eat, drink or smoke when using	it releases, dispersion and exposure g this product. Avoid skin contact. Remove and wash contaminated

according to Regulation (EC) No. 1907/2006

# L(+)-Lactic Acid

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L(+)-LACTIC ACIO Version 2.0 Revision Date: 24/07/2017								
Version 2.0			Revision D	ate: 24/07	/2017			
clothing before re	e-use	).						
Breathing appara Rubber gloves Face-shield Boots	Face-shield Boots Chemical resistant apron Long							
Notes Local effects								
Risk Managemer	nt Me	easures are based on o	qualitative risk ch	aracterizat	ion.			
3. Exposure estir	natio	on and reference to i	ts source					
Environment								
Contributing Scenario		Exposure Assessment Method	Specific conditions	Compartment \		9	Level of Exposure	RCR
		Qualitative approach used to conclude safe use.	All compartments					
Remarks: Environ No hazard to the e		tal exposure assessme onment.	ent for this scena	rio is not re	elevant.			
Workers								
Contributing Scenario		Exposure sessment Method	Specific condition	ons	Va	lue L	evel of Exposure	RCR
All PROCs Qual		o conclude safe						
All PROCs : All PROCs mentioned in section 1.								
4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario								
whether the operati to his use.	ional	eam user is required to conditions and risk ma dopted, the user should	anagement meas					

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### 1. Short title of Exposure Scenario: (Ref.: 7) Manufacture of bulk, large scale chemicals (including petroleum products) Main User Groups : SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites Sectors of end-use : SU8: Manufacture of bulk, large scale chemicals (including petroleum products) SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites Chemical product category : PC9a: Coatings and paints, thinners, paint removers PC15: Non-metal surface treatment products PC19: Intermediate PC20: Products such as pH-regulators, flocculants, precipitants, neutralization agents PC21: Laboratory chemicals PC35: Washing and cleaning products (including solvent based products) Process categories : 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) PROC15: Use as laboratory reagent Environmental Release Categories : 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) ERC6b: Industrial use of reactive processing aids ERC9a: Wide dispersive indoor use of substances in closed systems

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according to Regulation (EC) No. 1907/2006
L(+)-Lactic Acid /ersion 2.0 Revision Date: 24/07/2017
Version 2.0 Revision Date: 24/01/2017
2.1 Contributing scenario controlling environmental ERC6b, ERC9a: Formulation of preparations, Industri cesses and products, not becoming part of articles, ure of another substance (use of intermediates), I aids, Wide dispersive indoor use of substances in c
Product characteristics Concentration of the Substance in Mixture/Article: Covers the percentage of the substance in the product up to 100% (unless stated differently).
Amount used
EU tonnage : 58000 t/a
Fechnical conditions and measures / Organizational measures Remarks : No RMMs applicable. No hazard to the environment. Envi- ronmental exposure assessment for this scenario is not relevant.
2.2 Contributing scenario controlling worker exposure re for: PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC15: Use in closed batch process (synthesis or formula- ion), Use in batch and other process (synthesis) w here opportunity for exposure arises, Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/ or significant contact), Transfer of substance or preparation (charging/ dis-charging) from/ to vessels/ large containers at non-dedicated facilities, Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities, Transfer of substance or preparation into small containers (dedicated fill-ing line, including weighing), Use as laboratory re agent
Product characteristics Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100% (unless stated differently).
Fechnical conditions and measures Ensure adequate ventilation, especially in confined areas. Avoid temperatures above 200°C.
Drganizational measures to prevent/limit releases, dispersion and exposure Do not eat, drink or smoke when using this product. Avoid skin contact. Remove and wash contaminated clothing before re-use.
Conditions and measures related to personal protection ion, hygiene and health evaluation

according to Regulation (EC) No. 1907/2006

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Breathing apparatus only if aerosol or dust is formed. Rubber gloves Face-shield Boots Chemical resistant apron Long sleeved clothing

Notes

Local effects

Risk Management Measures are based on qualitative risk characterization.

3. Exposure estimation and reference to its source

#### Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment Value	÷	Level of Exposure	RCR
	Qualitative approach used to conclude safe use.		All compartments			
Remarks: Environmental exposure assessment for this scenario is not relevant. No hazard to the environment.						

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Expo- sure	RCR
All PROCs Qual	tative approach used to conclude safe use.				

All PROCs

: All PROCs mentioned in section 1.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

The immediate downstream user is required to evaluate

whether the operational conditions and risk management measures described in the exposure scenario fit to his use.

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Main User Groups	: SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	: SU9: Manufacture of fine chemicals
	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Chemical product category	: PC9a: Coatings and paints, thinners, paint removers PC15: Non-metal surface treatment products PC19: Intermediate
	PC20: Products such as pH-regulators, flocculants, precipitants, neutralization
	agents PC21: Laboratory chemicals
	PC35: Washing and cleaning products (including solvent based products)
	PC37: Water treatment chemicals
Process categories	: 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 formula-tion)
	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)
	PROC15: Use as laboratory reagent
	PROC21: Low energy manipulation of substances bound in materials and/or articles
	PROC26: Handling of solid inorganic substances at ambient temperature
Environmental Release Categories : E	RC2: 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)
	ERC6b: Industrial use of reactive processing aids
	ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers
	ERC9a: Wide dispersive indoor use of substances in closed systems

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2.1 Contributing scenario controlling environmental exposure for: ERC2, ERC4, ERC6a, ERC6b, ERC6d, ERC9a: Formulation of preparations, Industrial use of processing aids in processes and products, not becoming part of articles, Industrial use resulting in manu-facture of another substance (use of intermediates)								
, Industrial use of process regulators for poly resins, rubbers, polymers, Wide dispersive indoor u , Wide dispersive indoor u , Substances in closed systems								
Des dust share statistics								
Product characteristics Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100% (unless stated differently).								
Amount used								
Amount used EU tonnage : 58000 t/a								
Technical conditions and measures / Organizational measures Remarks : No RMMs applicable. No hazard to the environment. Envi- ronmental exposure assessment for this scenario is not relevant.								
2.2 Contributing scenario controlling worker exposure PROC4, re for: PROC1, PROC2, PROC3, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC15, PROC21, PROC26: Use in closed process, no likelihood of exposure, Use in c lost, continuous process with occa-sional controlled exposure, Use in closed batch process (synthesis or formulation), Use in batch and other process (synthesis) where opportunity unity for exposure arises, Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact), Calendering operations, Tr ansfer of substance or preparation (charging/ discharging) from/ to vessels/ large con-tainers at non-dedicated facilities, Transfer of substance or preparation into small containers (dedicated filling line, including weighing), Use as laboratory reagent, Low energy manipulation of substances bound in materials and/or articles, Handling of solid inorganic substances at ambient temperature								
Product characteristics Concentration of the Substance in : Covers the percentage of the substance in the product up to Mixture/Article 100% (unless stated differently).								
Technical conditions and measures Ensure adequate ventilation, especially in confined areas. Avoid temperatures above 200°C.								

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Organizational measures to prevent/limit releases, dispersion and exposure Do not eat, drink or smoke when using this product. Avoid skin contact. Remove and wash contaminated clothing before re-use.								
	sures related to personal p tus only if aerosol or dust is t apron Long			ion, hygie	ne and health	n evaluation		
Notes								
Local effects								
Risk Managemen	t Measures are based on o	qualitative risk cha	aracterizat	ion.				
3. Exposure estim	nation and reference to i	ts source						
Environment					_			
Contributing Scenario	Exposure Assessment Method	Specific conditions	Compart	ment Value	9	Level of Exposure	RCR	
	Qualitative approach used to conclude safe use.		All com	partments				
Remarks: Environr No hazard to the e	nental exposure assessme nvironment.	ent for this scenar	rio is not re	elevant.				
Workers							· · ·	
Contributing Scenario	Exposure Assessment Method	Specific condition	ons	Val	lue	Level of Exposure	RCR	
	ative approach used to conclude safe use.							
All PROCs : All PROCs mentioned in section 1. 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario								
The immediate down	nstream user is required to	o evaluate						

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whether the operational conditions and risk management measures described in the exposure scenario fit its use.

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1. Short title of Exposure Scenario: ( compounding and conversion	(Ref.: 9) Manufacture of plastics products, including							
Main User Groups	: SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites							
Sectors of end-use	: SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites							
Chemical product category	: PC32: Polymer preparations and compounds							
Process categories	: PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)							
Article categories	: AC13: Plastic articles							
Environmental Release Categories :	ERC6c: Industrial use of monomers for manufacture of thermoplastics							
2.1 Contributing scenario controlling monomers for manufacture of thermo	•							
Product characteristics Concentration of the Substance in Mixture/Article	: Covers the percentage of the substance in the product up to 100% (unless stated differently).							
Amount used EU tonnage	: 58000 t/a							
Technical conditions and measures / Or Remarks	rganizational measures : No RMMs applicable. No hazard to the environment. Envi- ronmental exposure assessment for this scenario is not relevant.							
2.2 Contributing scenario controlling batch processes for formulation of pr cant contact)								
Product (article) characteristic Remarks	: Covers the percentage of the substance in the product up to 100% (unless stated differently).							
Technical conditions and measures Ensure adequate ventilation, especial	ly in confined areas. Avoid temperatures above 200°C.							
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Organizational mag	sures to prevent/limit relea	2505		lienereion	and exposure		
	or smoke when using this					aminated clothing bef	ore re-use.
	asures related to personal tus only if aerosol or dust i nt apron Long			ion, hygie	ne and health	evaluation	
Notes Local effects							
	t Measures are based on	qualitative risk ch	aracterizat	ion.			
-							
3. Exposure e	estimation and refe	rence to its	source				
Environment							
Contributing Scenario	Exposure Assessment Method	Specific conditions	Compart	ment Value	2	Level of Exposure	RCR
	Qualitative		All com	partments			
	approach used to conclude safe use.						
Remarks: Environ No hazard to the e	mental exposure assessme environment.	ent for this scena	rio is not re	elevant.			
Workers							
Contributing Scenario	Exposure Assessment Method	Specific condition	ons	Val	ue	Level of Expo- sure	RCR
All PROCs Quali	ative approach used						
	to conclude safe use.			-			
All PROCs	All PROCs : All PROCs mentioned in section 1.						

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4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

The immediate downstream user is required to evaluate whether the

operational conditions and risk management measures described in the exposure scenario fit his use.

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I. Short title of Exposure Scenario: (Ref.: 10)	Building and construction work
Main User Groups	: SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	: SU19: Building and construction work
Chemical product category	: PC0: Other: building and construction preparations
Process categories	: PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Environmental Release Categories : E	ERC5: Industrial use resulting in inclusion into or onto a matrix
2.1 Contributing scenario controlling environn nclusion into or onto a matrix	nental resulting in exposure for: ERC5: Industrial use
Product characteristics Concentration of the Substance in Mixture/Article	: Covers the percentage of the substance in the product up to 100% (unless stated differently).
Amount used EU tonnage	: 58000 t/a
Technical conditions and measures / Org Remarks	ganizational measures : No RMMs applicable. No hazard to the environment. Envi- ronmental exposure assessment for this scenario is not relevant.
2.2 Contributing scenario controlling worker e	exposure or re for: PROC9: Transfer of substance ling line,
preparation into small containers (dedicated f	il including weighing)
Product characteristics Concentration of the Substance in Mixture/Article	: Covers the percentage of the substance in the product up to 100% (unless stated differently).
Technical conditions and measures	
Ensure adequate ventilation, especiall	y in confined areas. Avoid temperatures above 200°C.

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	asures to prevent/limit relea or smoke when using this p			•	and exposure nd wash contam	inated clothing befo	re re-use.
	asures related to personal   atus only if aerosol or dust i nt apron Long			ion, hygie	ene and health e	valuation	
Notes							
Local effects	nt Measures are based on o						
3. Exposure estir	mation and reference to	its source					
Environment							
Contributing Scenario	Exposure Assessment Method	Specific conditions	Compart	ment Value		Level of Exposure	RCR
	Qualitative approach used to conclude safe use.	All compartments					
Remarks: Environ No hazard to the e	mental exposure assessme environment.	ent for this scenar	rio is not re	levant.			
Workers							
Contributing Scenario	Exposure Assessment Method	Specific conditi	ons	Va	lue L	evel of Expo- sure	RCR
All PROCs Quali	tative approach used to conclude safe use.						
All PROCs	: All PROCs m	nentioned in section	on 1.				
4. Guidance to D	ownstream User to eval	uate whether h	e works ir	nside the l	boundaries se	t by the Exposure	Scenario
described in the	ownstream user is required exposure scenario fit his us I are adopted, the user sho	e.				-	sures

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ersion 2.0	Revision Date: 24/07/2	017
. Short title of Exposure Scenari	o: (Ref.: 11) Health servi	ces
Main User Groups	: SU 22: Professional entertainment, serv	uses: Public domain (administration, education, ices, craftsmen)
Sectors of end-use	: SU20: Health service	S
Chemical product category	: PC19: Intermediate PC21: Laboratory c	hemicals
Process categories		substance or preparation into small containers e, including weighing) boratory reagent
2.2 Contributing scenario controll o substance or preparation into s as laboratory reagent	•	re for: PROC9, PROC15: Transfer of icated filling line, including weighing),
Product characteristics Concentration of the Substance in Mixture/Article	: Covers the percentag 100% (unless state	e of the substance in the product up to d differently).
Ensure adequate ventilation, especially		
Organizational measures to prevent/limit i Do not eat, drink or smoke when using t		persion and exposure Remove and wash contaminated clothing before re-use.
Conditions and measures related to perso Breathing apparatus only if aerosol or d Rubber gloves Face-shield Boots Chemical resistant apron Long		n, hygiene and health evaluation
sleeved clothing		
Notes Local effects		
Dick Management Maggures are based	on qualitative risk characteriza	tion.
Risk Management Measures are based		

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3. Exposure estimation and reference to its source

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
All PROCs Qua	itative approach used				
	to conclude safe				
	use.				

All PROCs

: All PROCs mentioned in section 1.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

The immediate downstream user is required to evaluate

whether the operational conditions and risk management measures described in the exposure scenario fit to his use.

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### 1. Short title of Exposure Scenario: (Ref.: 12) Formulation of preparations and/or repackaging, without relevant subsequent service life

Main User Groups	: SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	<ul> <li>SU 10: Formulation [mixing] of preparations and/or re- packaging (excluding alloys)</li> <li>SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites</li> <li>SU 22: Professional uses: Public domain (administration, education,</li> </ul>
	entertainment, services, craftsmen)
Chemical product category	<ul> <li>PC4: Anti-Freeze and de-icing products</li> <li>PC8: Biocidal products (eg Disinfectants, pest control)</li> <li>PC9a: Coatings and paints, thinners, paint removers PC14: Metal surface treatment products, including galvanic and electroplating products</li> </ul>
	PC15: Non-metal surface treatment products PC17: Hydraulic fluids PC19: Intermediate
	<ul> <li>PC20: Products such as pH-regulators, flocculants, precipitants, neutralization agents</li> <li>PC21: Laboratory chemicals</li> <li>PC24: Lubricants, greases, release products</li> <li>PC25: Metal working fluids PC28:</li> <li>Perfumes, fragrances PC29:</li> <li>Pharmaceuticals</li> <li>PC31: Polishes and wax blends</li> <li>PC35: Washing and cleaning products (including solvent based products)</li> </ul>
	PC37: Water treatment chemicals
	PC38: Welding and soldering products (with flux coatings or flux cores.), flux products PC39: Cosmetics, personal care products
Process categories	<ul> <li>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 formula-tion)</li> </ul>
	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

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Environmental Release Categories :	<ul> <li>tainers (dedicated filling line, including weighing)</li> <li>PROC10: Roller application or brushing</li> <li>PROC11: Non industrial spraying</li> <li>PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation</li> <li>PROC15: Use as laboratory reagent</li> <li>PROC18: Greasing at high energy conditions</li> <li>PROC19: Hand-mixing with intimate contact and only PPE available</li> <li>PROC26: Handling of solid inorganic substances at ambient temperature</li> </ul> ERC2: Formulation of preparations <ul> <li>ERC4: Industrial use of processing aids in processes and products, not becoming part of articles</li> <li>ERC5: Industrial use resulting in inclusion into or onto a matrix</li> <li>ERC6a: Industrial use of reactive processing aids</li> <li>ERC7: Industrial use of substances in closed systems</li> <li>ERC8a: Wide dispersive indoor use of processing aids in open systems</li> <li>ERC9a: Wide dispersive indoor use of substances in closed systems</li> </ul>
ERC6a, ERC6b, ERC7, ERC8a, E cessing aids in processes and proc resulting in inclusion into or onto a substance (use of intermediates), I	matrix, Indus trial use resulting in manufacture of an-other ndustrial use of reactive processing aids, Indus-trial use of le dis persive indoor use of processing aids in open systems,
Product characteristics Concentration of the Substance in Mixture/Article	: Covers the percentage of the substance in the product up to 100% (unless stated differently).
Amount used EU tonnage	: 58000 t/a
Technical conditions and measures / Or Remarks	rganizational measures : No RMMs applicable. No hazard to the environment. Envi- ronmental exposure assessment for this scenario is not relevant.

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2.2 Contributing scenario controlling worker exposu re for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC14, PROC15, PROC18, PROC19, PROC26: Use in closed proce ss, no likelihood of exposure, Use in closed, continuous process with occasional controlled exposure. Use in closed batch process (synthesis or formulation), Use in batch and other process (synthesis) where opportunity for exposure arises, Mixing or bl ending in batch processes for form -lation of preparations and articles (multistage and / or significant contact), Industrial spraying, Transfer of substance or preparation (cha rging/ discharging) from/ to vessels/ large containers at non-dedicated facilities, Trans fer of substance or preparation (charg -ing/ discharging) from/ to vessels/ large container substance or preparation into small containers (ded Roller with at dedicated facilities, Transfer of application or brushing, Non industrial spra ying, icated filling line, including weighing), Production of preparations or articles by tabletting, compression, extrusion, pel letisation, Use as laboratory reagent, Greasing at high energy conditions, Hand-mixing with intimate contact and only PPE available, Handling of solid inorganic substances at ambient temperature Product characteristics Concentration of the Substance in : Covers the percentage of the substance in the product up to Mixture/Article 100% (unless stated differently). Technical conditions and measures Ensure adequate ventilation, especially in confined areas. Avoid temperatures above 200°C. Organizational measures to prevent/limit releases, dispersion and exposure Do not eat, drink or smoke when using this product. Avoid skin contact. Remove and wash contaminated clothing before re-use. Conditions and measures related to personal protection Breathing ion, hygiene and health evaluation apparatus only if aerosol or dust is formed. Rubber gloves Face-shield Boots Chemical resistant apron Long sleeved clothing Notes Local effects Risk Management Measures are based on qualitative risk characterization.

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#### 3. Exposure estimation and reference to its source

Environment							
Contributing Scenario	Exposure Assessment Method	Specific Compartment Value conditions		Level of Exposure	RCR		
	Qualitative approach used to conclude safe use.	All compartments					
Remarks: Environ No hazard to the e	mental exposure assessme environment.	ent for this scena	irio is not re	elevant.			
Workers							
Contributing Scenario	Exposure Assessment Method	Specific conditions		Value	L	evel of Expo- sure	RCR
All PROCs Qualt	tative approach used to conclude safe use.						
All PROCs : All PROCs mentioned in section 1.							
4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario							
The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user should ensure that risks are managed to at least equivalent levels.							

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### 1. Short title of Exposure Scenario: (Ref.: 13) Formulation of preparations and/or repackaging, with relevant subsequent service life

Main User Groups	: SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	<ul> <li>SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites</li> <li>SU 10: Formulation [mixing] of preparations and/or re-packaging (excluding alloys)</li> <li>SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)</li> </ul>
Chemical product category	<ul> <li>PC9a: Coatings and paints, thinners, paint removers</li> <li>PC9c: Finger paints</li> <li>PC9b: Fillers, putties, plasters, modeling clay</li> <li>PC35: Washing and cleaning products (including solvent based products)</li> </ul>
Process categories	: 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
	PROC10: Roller application or brushing PROC11: Non industrial spraying
Article categories	: AC1: Vehicles
Environmental Release Categories: ERC	24: Industrial use of processing aids in processes and products, not becoming part of articles ERC5: Industrial use resulting in inclusion into or onto a matrix
2.1 Contributing scenario contro use of processing aids in proce trial use resulting in inclusion in	sses and products, n ot becoming part of articles, Indus-
Product characteristics Concentration of the Substance in Mixture/Article	: Covers the percentage of the substance in the product up to 100% (unless stated differently).
Amount used EU tonnage	: 58000 t/a

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Technical conditions and measures / Organizational measures Remarks : No RMMs applicable. No hazard to the environment. Envi- ronmental exposure assessment for this scenario is not relevant.
2.2 Contributing scenario controlling worker exposure for: PROC5, PROC7, PROC8a, PROC8b, PROC10, PROC11: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact), Industrial spraying, Transfer of substance or preparation (charging/dis charging) from/ to vessels/ large con-tainers at non-dedicated facilities, Transfer of su bstance or preparation (charging/ dis-charging) from/ to vessels/ large containers at dedicated facilities, Roller application or brushing, Non-industrial spraying
Product (article) characteristic Remarks : Covers the percentage of the substance in the product up to 100% (unless stated differently).
Technical conditions and measures
Ensure adequate ventilation, especially in confined areas. Avoid temperatures above 200°C.
Organizational measures to prevent/limit releases, dispersion and exposure Do not eat, drink or smoke when using this product. Avoid skin contact. Remove and wash contaminated clothing before re-use.
Conditions and measures related to personal protection Breathing apparatus only if aerosol or dust is formed. Rubber gloves Face-shield Boots Chemical resistant apron Long sleeved clothing
Notes Local effects
Risk Management Measures are based on qualitative risk characterization.
3. Exposure estimation and reference to its source
Environment
Contributing Exposure As-Specific Compartment Value Level of RCR

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Version 2.0 Revision Date: 24/07/2017 Scenario sessment conditions Exposure Method Qualitative All compartments approach used to conclude safe use. Remarks: Environmental exposure assessment for this scenario is not relevant. No hazard to the environment. Workers Contributing RCR Value Exposure Specific conditions Level of Exposure Scenario Assessment Method All PROCs Qual tative approach used to conclude safe use. All PROCs : All PROCs mentioned in section 1. 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. If other OC/RMM are adopted, the user should ensure that risks are managed to at least equivalent levels.

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## 1. Short title of Exposure Scenario: (Ref.: 14) Manufacture of food products, without relevant subsequent service life

Main User Groups	: SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	: SU4: Manufacture of food products
Chemical product category	: PC0: Other: not specified PC2: Adsorbents
	PC20: Products such as pH-regulators, flocculants,
	precipitants, neutralization agents PC36: Water softeners
	PC37: Water treatment chemicals
Process categories	: PROC3: Use in closed batch process (synthesis or formula-
	tion) 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)
	PROC0: Other Process or activity
	substance (use of intermediates)
2.1 Contributing scenario controllin Formulation of preparations, Indust in Industrial use resulting in manufa	trial use resulting ng in inclusion into or onto a matrix,
Formulation of preparations, Indust	trial use resulting ng in inclusion into or onto a matrix,
Formulation of preparations, Indust n Industrial use resulting in manufa	trial use resulting ng in inclusion into or onto a matrix,
Formulation of preparations, Indust n Industrial use resulting in manufa Product characteristics Concentration of the Substance in Mixture/Article	trial use resulting ng in inclusion into or onto a matrix, acture of another substance (use of intermediates) : Covers the percentage of the substance in the product up to
Formulation of preparations, Indust n Industrial use resulting in manufa Product characteristics Concentration of the Substance in Mixture/Article	trial use resulting ng in inclusion into or onto a matrix, acture of another substance (use of intermediates) : Covers the percentage of the substance in the product up to
Formulation of preparations, Indust in Industrial use resulting in manufa Product characteristics Concentration of the Substance in Mixture/Article	<ul> <li>trial use resulting ng in inclusion into or onto a matrix, acture of another substance (use of intermediates)</li> <li>: Covers the percentage of the substance in the product up to 100% (unless stated differently).</li> </ul>
Formulation of preparations, Indust in Industrial use resulting in manufa Product characteristics Concentration of the Substance in Mixture/Article Amount used EU tonnage	<ul> <li>trial use resulting ng in inclusion into or onto a matrix, acture of another substance (use of intermediates)</li> <li>: Covers the percentage of the substance in the product up to 100% (unless stated differently).</li> <li>: 58000 t/a</li> </ul>
Formulation of preparations, Indust in Industrial use resulting in manufa Product characteristics Concentration of the Substance in Mixture/Article Amount used EU tonnage	<ul> <li>trial use resulting ng in inclusion into or onto a matrix, acture of another substance (use of intermediates)</li> <li>: Covers the percentage of the substance in the product up to 100% (unless stated differently).</li> <li>: 58000 t/a</li> </ul>
Formulation of preparations, Indust in Industrial use resulting in manufa Product characteristics Concentration of the Substance in Mixture/Article Amount used EU tonnage	trial use resulting acture of another       ng in inclusion into or onto a matrix, substance (use of intermediates)         : Covers the percentage of the substance in the product up to 100% (unless stated differently).         : 58000 t/a         Organizational       measures         : No RMMs applicable. No hazard to the environment. Envi-
Formulation of preparations, Indust n Industrial use resulting in manufa Product characteristics Concentration of the Substance in Mixture/Article Amount used EU tonnage	trial use resulting acture of another       ng in inclusion into or onto a matrix, substance (use of intermediates)         : Covers the percentage of the substance in the product up to 100% (unless stated differently).         : 58000 t/a         Organizational       measures         : No RMMs applicable. No hazard to the environment. Envi-

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2.2 Contributing scenario controlling worker exposure for: PROC0, PROC3, PROC4, PROC5: Other Process or activity, Use in closed batch process (synthesis or formula-tion), Use in batch and other process (synthesis) w here opportunity for exposure arises, Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact) Product characteristics Concentration of the Substance in : Covers the percentage of the substance in the product up to Mixture/Article 100% (unless stated differently). Technical conditions and measures Ensure adequate ventilation, especially in confined areas. Avoid temperatures above 200°C. Organizational measures to prevent/limit releases, dispersion and exposure Do not eat, drink or smoke when using this product. Avoid skin contact. Remove and wash contaminated clothing before re-use. Conditions and measures related to personal protection ion, hygiene and health evaluation Breathing apparatus only if aerosol or dust is formed. Rubber gloves Face-shield Boots Chemical resistant apron Long sleeved clothing Notes Local effects Risk Management Measures are based on qualitative risk characterization. 3. Exposure estimation and reference to its source Environment Level of RCR Contributing Specific Compartment Value Exposure Scenario Assessment conditions Exposure Method Qualitative All compartments approach used to conclude safe use.

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Remarks: Environmental exposure assessment for this scenario is not relevant. No hazard to the environment.

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Expo- sure	RCR
All PROCs Qua	itative approach used to conclude safe				
	use.				

All PROCs

: All PROCs mentioned in section 1.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

The immediate downstream user is required to evaluate

whether the operational conditions and risk management measures described in the exposure scenario fit to his use.

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. Short title of Exposure Scenario: (Ref.: 15	) Manufacture of food products, with relevant subsequent service life			
Main User Groups	: SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites			
Sectors of end-use	: SU4: Manufacture of food products			
Chemical product category	: PC0: Other: not specified			
Process categories	<ul> <li>PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)</li> </ul>			
Article categories	: AC 0: Other Articles			
Environmental Release Categories :	ERC3: Formulation in materials			
1 Contributing scenario controlling environ	mental materials exposure for: ERC3: Formulation in			
Product characteristics Concentration of the Substance in Mixture/Article	: Covers the percentage of the substance in the product up to 100% (unless stated differently).			
mount used EU tonnage	: 58000 t/a			
echnical conditions and measures / O Remarks	rganizational measures : No RMMs applicable. No hazard to the environment. Envi- ronmental exposure assessment for this scenario is not relevant.			
2 Contributing scenario controlling worker or formulation of preparations and cant cont				
roduct (article) characteristic Remarks	: Covers the percentage of the substance in the product up to 100% (unless stated differently).			
echnical conditions and measures Ensure adequate ventilation, especia	Ily in confined areas. Avoid temperatures above 200°C.			

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Organizational measures to prevent/limit releases, dispersion and exposure Do not eat, drink or smoke when using this product. Avoid skin contact. Remove and wash contaminated clothing before re-use.

ion, hygiene and health evaluation

Conditions and measures related to personal protection Breathing apparatus only if aerosol or dust is formed. Rubber gloves Face-shield Boots Chemical resistant apron Long sleeved clothing

### Notes

Local effects

Risk Management Measures are based on qualitative risk characterization.

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment Value	e	Level of Exposure	RCR
	Qualitative approach used to conclude safe use.		All compartments			

Remarks: Environmental exposure assessment for this scenario is not relevant. No hazard to the environment.

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
All PROCs Qual	tative approach used to conclude safe use.				

All PROCs

: All PROCs mentioned in section 1.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

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The immediate downstream user is required to evaluate whether the

operational conditions and risk management measures described in the exposure scenario fit his use.

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Main User Groups	: SU 22: Professional uses: Public domain (administration, education,
	entertainment, services, craftsmen)
Sectors of end-use	: SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Chemical product category	: PC12: Fertilizers PC19: Intermediate
	PC21: Laboratory chemicals PC24: Lubricants, greases, release products PC25: Metal working fluids PC31: Polishes and wax blends
	PC34: Textile dyes, finishing and impregnating products; in-cluding bleaches and other processing aids
	PC35: Washing and cleaning products (including solvent based products)
	PC39: Cosmetics, personal care products
Process categories	: 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 formula-tion)
	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
	PROC11: Non industrial spraying
	PROC13: Treatment of articles by dipping and pouring
	PROC14: Production of preparations or articles by tabletting, compression,
	extrusion, pelletisation
	PROC15: Use as laboratory reagent
	PROC17: Lubrication at high energy conditions and in part
	open process PROC19: Hand-mixing with intimate contact and only PPE available
	PROC20: Heat and pressure transfer fluids in dispersive, professional use but
	closed systems PROC24: High (mechanical) energy work-up of substances bound in

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Environmental Release Categories : ER	<ul> <li>RC2: Formulation of preparations</li> <li>ERC4: Industrial use of processing aids in processes and products, not becoming part of articles</li> <li>ERC5: Industrial use resulting in inclusion into or onto a matrix</li> <li>ERC6b: Industrial use of reactive processing aids</li> <li>ERC7: Industrial use of substances in closed systems</li> <li>ERC8a: Wide dispersive indoor use of processing aids in open systems</li> <li>ERC8d: Wide dispersive outdoor use of processing aids in open systems</li> <li>ERC8d: Wide dispersive outdoor use of processing aids in open systems</li> <li>ERC8d: Wide dispersive outdoor use of processing aids in open systems</li> <li>ERC8e: Wide dispersive outdoor use of reactive substances in open systems</li> <li>ERC8e: Wide dispersive outdoor use of reactive substances in open systems</li> <li>ERC8f: Wide dispersive outdoor use of substances in closed systems</li> <li>ERC9a: Wide dispersive indoor use of substances in closed systems</li> <li>ERC9b: Wide dispersive outdoor use of substances in closed systems</li> </ul>
ERC7, ERC8a, ERC8b, ERC8d, ERC8d Industrial use of processing aids in proc use resulting in inclusion into or onto a r use of substances in closed systems, W systems, Wide dispersive indoor use of outdoor use of processing aids in open	vironmental exposure for: ERC2, ERC4, ERC5, ERC6b, e, ERC8f, ERC 9a, ERC9b: Formulation of preparations, eesses and products, not becoming part of articles, Industrial matrix, Industrial use of reactive processing aids, Industrial /ide dispersive indoor use of processing aids in open reac -tive substances in open systems, Wide dispersive systems, Wide dispersive outdoor use of reacti ve ersive outdoor use resulting in inclusion indoor use of in closed into or onto a matrix, Wide dispersive spersive outdoor use of substances
Product characteristics Concentration of the Substance in Mixture/Article	: Covers the percentage of the substance in the product up to 100% (unless stated differently).
Amount used EU tonnage	: 58000 t/a
Technical conditions and measures / Orga Remarks	anizational measures : No RMMs applicable. No hazard to the environment. Envi- ronmental exposure assessment for this scenario is not relevant.

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2.2 Contributing scenario controlling worker exposu re for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC14, PROC15, PROC17, PROC19, PROC20, PROC24: Use in closed process, no likelihood of exposure, Use in closed, continuous proce ss with occasional controlled expo-sure, Use in closed batch process (synthesis or for mulation), Use in batch and other pro-cess (synthesis) where opportunity for exposure ari ses, Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant con-tact), Industrial spraying, Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities, Transfer of substance or preparation (charging/ discharging) from/ to vessel s/ large containers at dedicated facili-ties, Transfer of substance or preparation into sma II containers (dedicated filling line, including weighing), Roller application or brushing Non industrial spraying, Treatment of articles by dipping and pouring, Production of prep compression, extrusion, pelletisation, Use as labor ergy conditions and in partly open process, Hand-mi PPE available, Heat and pressure transfer fluids in dispersive, professional use but closed systems, High (mechanical) energy work-up of and/or articles arations or articles by tabletting, atory reagent, Lubrication at high en-xing with intimate contact and only substances bound in materials Product characteristics Concentration of the Substance in : Covers the percentage of the substance in the product up to Mixture/Article 100% (unless stated differently). Technical conditions and measures Ensure adequate ventilation, especially in confined areas. Avoid temperatures above 200°C. Organizational measures to prevent/limit releases, dispersion and exposure Do not eat, drink or smoke when using this product. Avoid skin contact. Remove and wash contaminated clothing before re-use. Conditions and measures related to personal protection Breathing ion, hygiene and health evaluation apparatus only if aerosol or dust is formed. Rubber gloves Face-shield Boots Chemical resistant apron Long sleeved clothing Notes Local effects Risk Management Measures are based on qualitative risk characterization.

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#### 3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment Value	9	Level of Exposure	RCR
	Qualitative approach used to conclude safe use.		All compartments			
	- 1					

Remarks: Environmental exposure assessment for this scenario is not relevant. No hazard to the environment.

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
All PROCs Qual	tative approach used to conclude safe use.				

All PROCs

: All PROCs mentioned in section 1.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

The immediate downstream user is required to evaluate

whether the operational conditions and risk management measures described in the exposure scenario fit to his use.

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. Short title of Exposure Scenario	: (Ref.: 17) Public domain, with relevant subsequent service life
Main User Groups	: SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Sectors of end-use	: SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	: 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
	PROC11: Non industrial spraying PROC12: Treatment of articles by disping and pouring
	PROC13: Treatment of articles by dipping and pouring PROC16: Using material as fuel sources, limited exposure to
	unburned product to be expected
	PROC18: Greasing at high energy conditions
	PROC19: Hand-mixing with intimate contact and only PPE available
	PROC20: Heat and pressure transfer fluids in dispersive, professional use but
	closed systems
Environmental Release Categories	: ERC8a: Wide dispersive indoor use of processing aids in
	open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems
	Encode. While dispersive outdoor use of processing and in open systems
	ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix
	ERC9a: Wide dispersive indoor use of substances in closed systems
	ERC9b: Wide dispersive outdoor use of substances in closed systems
	ERC10b: Wide dispersive outdoor use of long-life articles and materials with high or intended release (including abrasive processing)
/ide dispersive indoor use of proc open systems, Wide dispersive of substances in closed systems, V	ng environmental exposure for: ERC8a, ERC8d, ERC8f, ERC9a, ERC9b, ERC10b: cessing aids in open systems, Wide dispersive outdoor use of processing aids outdoor use resulting in inclusion into or onto am atrix, Wide dispersive indoor use Wide dispersive outdo or use of substances in closed sys-tems, Wide dispersive d materials with high or intended-ed release (including abrasive processing)
roduct characteristics	

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Amount used	
EU tonnage	: 58000 t/a
Technical conditions and measures / Organizatio Remarks	onal : No RMMs measures applicable. No hazard to the environment. Envi- ronmental exposure assessment for this scenario is not relevant.
PROC13, PROC16, PROC18, PROC1 discharging) from/ to vessels/ la rge co or preparation (chargin g/ discharging) applicat ion or brushing, Non industrial material as fuel sources, limited expos	orker exposu re for: PROC8a, PROC8b, PROC10, PROC11, 9, PROC20: Transfer of substance or preparation (charging/ intainers at non- dedicated facilities, Transfer of substance from/ to vessels/ large containers at dedicated facilities, Roller spraying, Treatment of articles by dipping and pouring, Using sure to unburned product to be expected, Greasing at high timate contact and only PPE available Heat and pressure al use but closed systems
Product characteristics Concentration of the Substance in Mixture/Article	: Covers the percentage of the substance in the product up to 100% (unless stated differently).
Technical conditions and measures	
Ensure adequate ventilation, especially in conf	ined areas. Avoid temperatures above 200°C.
Organizational measures to prevent/limit release Do not eat, drink or smoke when using this pro	s, dispersion and exposure duct. Avoid skin contact. Remove and wash contaminated clothing before re-use.
Conditions and measures related to personal pro Breathing apparatus only if aerosol or dust is for Rubber gloves Face-shield Boots Chemical resistant apron Long sleeved clothing	
Notes	
Local effects Risk Management Measures are based on qua	alitative risk characterization.

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3. Exposure estimation and reference to its source

#### Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment Value	9	Level of Exposure	RCR
	Qualitative approach used to conclude safe use.		All compartments			

Remarks: Environmental exposure assessment for this scenario is not relevant. No hazard to the environment.

#### Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
All PROCs Qual	tative approach used to conclude safe use.				

All PROCs

: All PROCs mentioned in section 1.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

The immediate downstream user is required to evaluate

whether the operational conditions and risk management measures described in the exposure scenario fit to his use.

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## 1. Short title of Exposure Scenario: (Ref.: 18) Private household, without relevant subsequent service life

Main User Groups	: SU 21: Consumer uses: Private households (= general public = consumers)
Sectors of end-use	: SU 21: Consumer uses: Private households (= general public = consumers)
Chemical product category	: PC1: Adhesives, sealants PC2: Adsorbents
	<ul> <li>PC3: Air care products</li> <li>PC4: Anti-Freeze and de-icing products</li> <li>PC8: Biocidal products (eg Disinfectants, pest control)</li> <li>PC9a: Coatings and paints, thinners, paint removers</li> <li>PC9b: Fillers, putties, plasters, modeling clay</li> <li>PC9c: Finger paints</li> <li>PC12: Fertilizers</li> <li>PC13: Fuels</li> <li>PC14: Metal surface treatment products, including galvanic and electroplating products</li> <li>PC15: Non-metal surface treatment products</li> <li>PC17: Hydraulic fluids</li> </ul>
	PC20: Products such as pH-regulators, flocculants, precipitants, neutralization agents PC21: Laboratory chemicals PC24: Lubricants, greases, release products PC25: Metal working fluids PC31: Polishes and wax blends
	PC32: Polymer preparations and compounds PC35: Washing and cleaning products (including solvent based products) PC39: Cosmetics, personal care products
Environmental Release Categori	es : ERC1: Manufacture of substances
	ERC2: Formulation of preparations ERC4: Industrial use of processing aids in processes and products, not becoming part of articles 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 ERC9a: Wide dispersive indoor use of substances in closed systems

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2.1 Contributing scenario controlling environmental ERC8a, exposure for: ERC1, ERC2, ERC4, ERC8c, ERC8d, ERC9a: Manufacture of substances, Formulation of preparations, Industrial use of processing aids in processes and products, not becoming part of articles, Wide dispersive indoor use of processing aids in open systems , Wide dispersive indoor use resulting in inclusion into or onto a matrix, Wide dispersive outdoor use of processing aids in open systems, Wide dispersive in door use of substances in closed systems						
Product characteristics Concentration of the Substance in Mixture/Article	: Covers the percentage of the substance in the product up to 5% Maximum in consumer products No hazard to the environment. Environmental exposure assessment for this scenario is not relevant.					
Amount used	: 58000 t/a					
Adsorbents, Air ca re products, Anti -Freeze a control), Coatings and paints, thinners, paint ers, Fuels, Metal surface treatment products, treatment products, Hydraulic fluids, Products Laboratory chemicals, Lubricants, greases, re	er expo PC9a, PC9b, sure for: PC1, PC2, PC3, PC4, PC8, 20, PC21, PC24, PC25, PC31, PC32, PC35, PC39: Adhesives, sealants, and de-icing products, Biocidal products (eg Disinfectan ts, pest removers, Fillers, putties, plaster s, modeling clay, Finger paints, Fertiliz- including galvanic and electroplating products, Non-metal-surface s such as pH-regulators, flocculants, precipitants, neutralization agents, elease products, Metal working flu preparations and compounds, blvent based products), Cosmetics, personal care products ids, Polishes and wax blends, Polymer					
Product characteristics Concentration of the Substance in Mixture/Article	: Covers the percentage of the substance in the product up to 5% Maximum in consumer products No health hazard below this concentration.					
3. Exposure estimation and reference to its so	ource					
Environment						

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Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment Value		Level of Exposure	R	CR			
	Qualitative approach used to conclude safe use.		All compartments							
Remarks: Environmental exposure assessment for this scenario is not relevant. No hazard to the environment.										
Consumers										
Contributing Scenario	Exposure Assessment Method	Specific conditions		Value	Level of Ex- RC soure		RCR			
	Qualitative approach used to conclude safe use.									
4. Guidance to Dov	vnstream User to eva	luate whether h	ne works inside the bo	undaries set by t	the Exposure	Scenar	rio			

The immediate downstream user is required to evaluate

whether the operational conditions and risk management measures described in the exposure scenario fit to his use.

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Short lille of Exposure Scenario:	(Ref.: 19) Private household, with relevant subsequent service life
Main User Groups	: SU 21: Consumer uses: Private households (= general public = consumers)
Sectors of end-use	: SU 21: Consumer uses: Private households (= general public = consumers)
Chemical product category	<ul> <li>PC1: Adhesives, sealants</li> <li>PC4: Anti-Freeze and de-icing products</li> <li>PC8: Biocidal products (eg Disinfectants, pest control)</li> <li>PC9b: Fillers, putties, plasters, modeling clay</li> <li>PC9c: Finger paints</li> <li>PC15: Non-metal surface treatment products</li> <li>PC20: Products such as pH-regulators, flocculants, precipitants, neutralization agents</li> <li>PC24: Lubricants, greases, release products</li> <li>PC31: Polishes and wax blends</li> <li>PC35: Washing and cleaning products (including solvent based products)</li> </ul>
Article categories	: AC02: Other (intended to be released): not specified AC1: Vehicles AC2: Machinery, mechanical appliances, electrical/electronic articles
	open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix ERC9a: Wide dispersive indoor use of substances in closed systems ERC9b: Wide dispersive outdoor use of substances in closed systems ERC10b: Wide dispersive outdoor use of long-life articles and materials with high or intended release (including abrasive processing)
de dispersive indoor use of proce en systems, Wide dispersive out- e of sub-use of substances in clos s and materials with high or inten asive processing) duct characteristics	g environmental exposure for: ERC8a, ERC8d, ERC8f, ERC9a, ERC9b, ERC10b: essing aids in open systems, Wide dispersive outdoor use of processing aids in door use resulting in inclusion into or onto a matr ix, Wide dispersive indoor sed sys-stances in closed systems, Wide dispersive outdoor tems, Wide d- ed release (including dispersive outdoor use of long-life arti
Product characteristics Concentration of the Substance in	. Covere the percentage of the substance in the product up to

SAFETY DA	TA SHEET					
	on (EC) No. 1907/2006					
L(+)-Lactic	Acid					
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Amount used EU tonnage		: 58000 t/a	а			
PC31, PC35: Adhe control), Fillers, pu such as pH-regulat	enario controlling con esives, seal ants, Anti- tties, plasters, modelii tors, flocculants, preci blends, Washing an d	Freeze and de- ng clay, Finger pitants, neutrali	icing products, Biod paints, Non-metal-s zation agents, Lubr	cidal products (e urface tr eatme icants, greases	eg Disinfectants, nt products, Pro , re-lease produc	pe st ducts
Product (article) char Concentration of t Mixture/Article		5% Ma	he percentage of the s ximum in consumer p ncentration.	-	•	
3. Exposure estima	ation and reference to	its source				
Environment						
Contributing Scenario			Compartment Value	•	Level of Exposure	RCR
	Qualitative approach used to conclude safe use.		All compartments			
Remarks: Environment No hazard to the environment	ental exposure assessmo vironment.	ent for this scena	rio is not relevant.			
Consumers						·
Contributing Scenario	Exposure Assessment Method	Specific conditions		Value	Level of Ex soure	- RCR
	Qualitative approach used to conclude safe use.					
The immediate downs	wnstream User to eva	o evaluate				Scenario
	nal conditions and risk ma	-				