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SECTION 1: Identification of the substance/mixture and of the company/undertaking

· **1.1 Product identifier**

· **Trade name VERSTÄRKER RE**
· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
· **Product category** PC1 Adhesives, sealants
· **Application of the substance / the mixture** Hardener

· **1.3 Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
H.B. Fuller, Isar-Rakoll, S.A.
Estrada Nacional 13
PT-4486-851 Mindelo - Vila do Conde
+351 229 288 200
EU-MSDS@hbfuller.com

· **Informing department:** Regulatory department
· **1.4 Emergency telephone number:** +44 (0) 1235 239 670 (24 hours)

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**
· **Classification according to Regulation (EC) No 1272/2008**

Flam. Liq. 2	H225	Highly flammable liquid and vapour.
Acute Tox. 4	H332	Harmful if inhaled.
Skin Irrit. 2	H315	Causes skin irritation.
Eye Irrit. 2	H319	Causes serious eye irritation.
Resp. Sens. 1	H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin Sens. 1	H317	May cause an allergic skin reaction.
STOT SE 3	H335-H336	May cause respiratory irritation. May cause drowsiness or dizziness.

· **2.2 Label elements**
· **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the CLP regulation.
· **Hazard pictograms**

GHS02 GHS07 GHS08

· **Signal word** Danger

· **Hazard-determining components of labelling:**
triphenylmethane-4,4',4''-triisocyanate
ethyl acetate
p-toluenesulphonyl isocyanate
· **Hazard statements**
H225 Highly flammable liquid and vapour.
H332 Harmful if inhaled.

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H315 Causes skin irritation.
H319 Causes serious eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317 May cause an allergic skin reaction.
H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.

· **Precautionary statements**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P241 Use explosion-proof [electrical/ventilating/lighting] equipment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **2.3 Other hazards**

In the event of a large-scale use of the product, ignition sources in the immediate proximity and in low-lying areas, such as welding equipment, bells, heating elements, refrigerators, storage heaters, etc. should be switched off! Erect warning signs warning of the hazardous risk of explosive atmosphere!

· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

· **3.2 Chemical characterisation: Mixtures**
· **Description:** Hardener

· **Dangerous components:**		
CAS: 141-78-6 EINECS: 205-500-4 Reg.nr.: 01-2119475103-46-0000	ethyl acetate Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336	50-100%
CAS: 2422-91-5 EINECS: 219-351-8 Reg.nr.: 01-2120039442-63-0000	triphenylmethane-4,4',4''-triisocyanate Acute Tox. 2, H330; Resp. Sens. 1, H334; Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	25-<50%
CAS: 4083-64-1 EINECS: 223-810-8 Reg.nr.: 01-2119980050-47	p-toluenesulphonyl isocyanate Resp. Sens. 1, H334; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	<0.5%

· **Additional information** For the wording of the listed hazard phrases refer to section 16.

*
SECTION 4: First aid measures

· **4.1 Description of first aid measures**
· **General information**

Instantly remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
Remove breathing apparatus only after soiled clothing has been completely removed.
In case of irregular breathing or respiratory arrest provide artificial respiration.
Call a doctor immediately.

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· **After inhalation**
Supply fresh air or oxygen; call for doctor.
In case of unconsciousness bring patient into stable side position for transport.
· **After skin contact**
Instantly wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
· **After eye contact**
Rinse opened eye for several minutes (15 min) under running water. Then consult doctor.
· **After swallowing**
Do not induce vomiting; instantly call for medical help.
In case of persistent symptoms consult doctor.
· **4.2 Most important symptoms and effects, both acute and delayed**
No further relevant information available.
· **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

· **5.1 Extinguishing media**
· **Suitable extinguishing agents**
Use fire fighting measures that suit the environment.
Water haze
Foam
Fire-extinguishing powder
Carbon dioxide
· **For safety reasons unsuitable extinguishing agents** Water with a full water jet.
· **5.2 Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
In case of fire CO, NOx, isocyanates and traces of HCN can be formed.
· **5.3 Advice for firefighters**
· **Protective equipment:**
Put on breathing apparatus.
Do not inhale explosion gases or combustion gases.
· **Additional information**
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Collect contaminated fire fighting water separately. It must not enter drains.

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**
Put on breathing apparatus.
Bring persons out of danger.
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Keep away from ignition sources
Use breathing protection against the effects of fumes/dust/aerosol.
Wear protective clothing.
· **6.2 Environmental precautions:** Prevent material from reaching sewage system, holes and cellars.
· **6.3 Methods and material for containment and cleaning up:**
Dispose of contaminated material as waste according to item 13.
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents
Send for recovery or disposal in suitable containers.

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Use non sparking handtools.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders)

· **6.4 Reference to other sections**
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**
Store in cool, dry place in tightly closed containers.
Ensure good ventilation/exhaustion at the workplace.
Open and handle container with care.
Prevent formation of aerosols.
Ensure that suitable extractors are available on processing machines
Take note of emission threshold.
Use solvent-proof equipment.
Keep away from children
Keep eye wash bottles available on working place.

· **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect from heat.
Protect against electrostatic charges.
Keep breathing equipment ready.
Highly volatile, flammable constituents are released during processing.
Fumes can combine with air to form an explosive mixture.
Flammable mixtures may be formed in empty containers.

· **7.2 Conditions for safe storage, including any incompatibilities**
· **Storage**
· **Requirements to be met by storerooms and containers:**
Store in cool location.
Keep dark, cool and dry.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** Store in cool, dry conditions in well sealed containers.
· **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

· **Additional information about design of technical systems:**
Please take care on national and local requirements.

· **8.1 Control parameters**

· **Components with critical values that require monitoring at the workplace:**	
CAS: 141-78-6 ethyl acetate	
WEL	Short-term value: 1468 mg/m³, 400 ppm Long-term value: 734 mg/m³, 200 ppm
CAS: 4083-64-1 p-toluenesulphonyl isocyanate	
WEL	Short-term value: 0.07 mg/m³ Long-term value: 0.02 mg/m³ Sen; as -NCO

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· **DNELs**
ETHYL ACETATE (CAS141-78-6):
Human exposure:
DNEL: 1468 mg/m³ (acute systemic effects; inhalation; workers)
DNEL: 1468 mg/m³ (acute local effects; inhalation; workers)
DNEL: 734 mg/m³ (long-term systemic effects; inhalation; workers)
DNEL: 734 mg/m³ (long-term local effects; inhalation; workers)
DNEL: 63 mg/kg body weight/day (long-term systemic effects; dermal; workers)

DNEL: 734 mg/m³ (acute systemic effects; inhalation; general population)
DNEL: 734 mg/m³ (acute local effects; inhalation; general population)
DNEL: 367 mg/m³ (long-term systemic effects; inhalation; general population)
DNEL: 4,5 mg/kg body weight/day (long-term systemic effects; oral; general population)
DNEL: 367 mg/m³ (long-term local effects; inhalation; general population)
DNEL: 37 mg/kg body weight/day (long-term systemic effects; dermal; general population)
· **PNECs**
ETHYL ACETATE (CAS 141-78-6):
Environment:
PNEC (freshwater): 0.26 mg/L (based on the lowest chronic toxicity value NOEC = 2.6 mg/L for invertebrates and assessment factor 10).
PNEC (saltwater): 0.026 mg/L (based on the lowest chronic toxicity value NOEC = 2.6 mg/L for invertebrates and assessment factor 100).
PNEC (intermittent releases): 1.65 mg/L (based on the lowest aquatic toxicity value EC50 = 165 mg/L for invertebrates and assessment factor 100).
PNEC (sediment, freshwater): 1.25 mg/kg dry weight (based on partition coefficient method).
PNEC (sediment, saltwater): 0.125 mg/kg dry weight (based on partition coefficient method).
PNEC (soil): 0.24 mg/kg dry weight (based on partition coefficient method).
PNEC (sewage treatment plant): 650 mg/L (based on the lowest effect concentration for micro-organisms EC10 = 650 mg/L and assessment factor 1).
· **Additional information:** Based on information valid at the time of writing.

· **8.2 Exposure controls**
· **Personal protective equipment**
· **General protective and hygienic measures**
Keep away from food, drink and animal feedingstuffs.
Instantly remove any soiled and impregnated garments.
Wash hands during breaks and at the end of the work.
Store protective clothing separately.
Avoid contact with the eyes and skin.
· **Breathing equipment:**
In case of brief exposure or low pollution (exceeding of TLV) use breathing filter apparatus. In case of intensive or longer exposure use breathing apparatus that is independent of circulating air.
Not necessary if room is well-ventilated.
Ensure that suitable extractors are available on processing machines
· **Recommended filter device for short term use:** Filter A
· **Protection of hands:**
Solvent resistant gloves
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
· **Material of gloves** Butyl rubber, BR
· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:** Tightly sealed safety glasses.

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· **Body protection:** Protective work clothing.

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Fluid
Colour:	According to product specification
· **Smell:**	Characteristic
· **Odour threshold:**	Not determined.
· **pH-value:**	Not determined.
· **Change in condition**	
Melting point/freezing point:	Not determined
Initial boiling point and boiling range:	75 °C
· **Flash point:**	-4 °C
· **Inflammability (solid, gaseous)**	Not applicable.
· **Decomposition temperature:**	Not determined.
· **Self-inflammability:**	Product is not selfigniting.
· **Explosive properties:**	Product is not explosive. However, formation of explosive vapour/air mixtures is possible.
· **Critical values for explosion:**	
Lower:	2.2 Vol %
Upper:	11.5 Vol %
· **Vapour pressure at 20 °C:**	97 hPa
· **Density at 20 °C**	0.99 g/cm³
· **Relative density**	Not determined.
· **Vapour density**	Not determined.
· **Evaporation rate**	Not determined.
· **Solubility in / Miscibility with**	
Water:	Not miscible or difficult to mix
· **Partition coefficient: n-octanol/water:**	Not determined.
· **Viscosity:**	
dynamic:	Not determined.
kinematic at 20 °C:	11 s (DIN 53211/4)
· **Solvent content:**	
Organic solvents:	72.6 %
· **9.2 Other information**	No further relevant information available.

SECTION 10: Stability and reactivity

· **10.1 Reactivity** No further relevant information available.

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· **10.2 Chemical stability**
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
· **10.3 Possibility of hazardous reactions** Develops readily flammable vapours / fumes
· **10.4 Conditions to avoid** No further relevant information available.
· **10.5 Incompatible materials:** No further relevant information available.
· **10.6 Hazardous decomposition products:** No dangerous decomposition products known

SECTION 11: Toxicological information

· **11.1 Information on toxicological effects**
· **Acute toxicity**
Harmful if inhaled.

· **LD/LC50 values that are relevant for classification:**		
CAS: 141-78-6 ethyl acetate		
Oral	LD50	4,935 mg/kg (rbt)
Inhalative	LC50/4 h	22.5 mg/L (rat)
CAS: 2422-91-5 triphenylmethane-4,4',4"-triisocyanate		
Oral	LD50	500 mg/kg (ATE)
Inhalative	LC50/2h	0.05 mg/l (ATE)
CAS: 4083-64-1 p-toluenesulphonyl isocyanate		
Oral	LD50	2,600 mg/kg (rat)

· **Primary irritant effect:**
· **Skin corrosion/irritation**
Causes skin irritation.
· **Serious eye damage/irritation**
Causes serious eye irritation.
· **Respiratory or skin sensitisation**
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
· **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
· **Carcinogenicity** Based on available data, the classification criteria are not met.
· **Reproductive toxicity** Based on available data, the classification criteria are not met.
· **STOT-single exposure**
May cause respiratory irritation. May cause drowsiness or dizziness.
· **STOT-repeated exposure** Based on available data, the classification criteria are not met.
· **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

· **12.1 Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **12.2 Persistence and degradability** No further relevant information available.
· **12.3 Bioaccumulative potential** No further relevant information available.
· **12.4 Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.

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· **12.5 Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**
· **Recommendation**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Hand over to disposers of hazardous waste.
Incineration under approved, controlled conditions using incinerators suitable or designed for the disposal of hazardous chemical wastes, is the preferred method for disposal.

· **European waste catalogue**	
08 00 00	WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS
08 04 00	wastes from MFSU of adhesives and sealants (including waterproofing products)
08 04 09*	waste adhesives and sealants containing organic solvents or other hazardous substances

· **Uncleaned packagings:** S 60 is only applicable for liquid or unreacted materials.
· **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

· **14.1 UN-Number**
· **ADR, IMDG, IATA** UN1993

· **14.2 UN proper shipping name**
· **ADR** 1993 FLAMMABLE LIQUID, N.O.S. (triphenylmethane-4,4',4"-triisocyanate, ETHYL ACETATE)
· **IMDG, IATA** FLAMMABLE LIQUID, N.O.S. (triphenylmethane-4,4',4"-triisocyanate, ETHYL ACETATE)

· **14.3 Transport hazard class(es)**
· **ADR**
· **Class** 3 Flammable liquids.
· **Label** 3

· **IMDG, IATA**
· **Class** 6.1 Toxic substances.
· **Label** 3

· **14.4 Packing group**
· **ADR, IMDG, IATA** II

· **14.5 Environmental hazards:** Not applicable.

· **14.6 Special precautions for user** Warning: Flammable liquids.
· **Kemler Number:** 33
· **EMS Number:** F-E,S-E

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· **Stowage Category**	B
· **Stowage Code**	SW2 Clear of living quarters.
· **Segregation Code**	SG50 Segregation from foodstuffs as in 7.3.4.2.1, 7.6.3.1.2 or 7.7.3.6. SG57 Stow "separated from" odour-absorbing cargoes
· **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **ADR**	
· **Limited quantities (LQ)**	1L
· **Excepted quantities (EQ)**	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· **Transport category**	2
· **Tunnel restriction code**	C/E
· **IMDG**	
· **Limited quantities (LQ)**	1L
· **Excepted quantities (EQ)**	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· **Remarks:**	Suitable UN approved container necessary.
· **IATA**	
· **Remarks:**	Suitable UN approved container necessary.
· **UN "Model Regulation":**	UN 1993 FLAMMABLE LIQUID, N.O.S. (TRIPHENYLMETHANE-4,4',4"-TRIISOCYANATE, ETHYL ACETATE), 3, II

SECTION 15: Regulatory information

· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **Directive 2012/18/EU**
· **Named dangerous substances - ANNEX I** None of the ingredients is listed.
· **Seveso category** P5c FLAMMABLE LIQUIDS
· **Qualifying quantity (tonnes) for the application of lower-tier requirements** 5.000 t
· **Qualifying quantity (tonnes) for the application of upper-tier requirements** 50.000 t
· **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3

· **National regulations**

· **Other regulations, limitations and prohibitive regulations**
· **VOC (EU) in %:** 72.64 %
· **VOC (EU) in g/l:** 719.1 g/l
· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has been carried out.

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SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.
The information provided about the product on this Safety Sheet has been compiled from knowledge of the individual constituent.
The data given here only applies when product used for proper application(s). The product is not sold as suitable for other applications - usage in such may cause risks not mentioned in this sheet. Do not use for other application(s) without seeking advice from manufacturer.

· **Relevant phrases**
H225 Highly flammable liquid and vapour.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H330 Fatal if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.

· **Classification according to Regulation (EC) No 1272/2008**
The classification of the mixture is generally based on the calculation method using substance data according to Regulation (EC) No 1272/2008.

· **Department issuing data sheet:** Regulatory department
· **Contact:** EU-MSDS@hbfuller.com
· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
SVHC: Substances of Very High Concern
vPvB: very Persistent and very Bioaccumulative
Flam. Liq. 2: Flammable liquids – Category 2
Acute Tox. 4: Acute toxicity - oral – Category 4
Acute Tox. 2: Acute toxicity - inhalation – Category 2
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Resp. Sens. 1: Respiratory sensitisation – Category 1
Skin Sens. 1: Skin sensitisation – Category 1
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

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Annex: Exposure scenario

ethyl acetate

· **Short title of the exposure scenario** Use in coatings and adhesives (industrial)
· **Sector of Use** SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
· **Product category** PC1 Adhesives, sealants
· **Process category**
PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.
PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
PROC4 Chemical production where opportunity for exposure arises
PROC5 Mixing or blending in batch processes
PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
PROC7 Industrial spraying
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
PROC10 Roller application or brushing
PROC13 Treatment of articles by dipping and pouring
PROC14 Tabletting, compression, extrusion, pelletisation, granulation
PROC15 Use as laboratory reagent
· **Environmental release category**
ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
· **Description of the activities / processes covered in the Exposure Scenario**
See section 1 of the annex to the Safety Data Sheet.
· **Conditions of use** Use at not higher than 20 ° C above the ambient temperature is assumed
· **Duration and frequency**
8hrs (full working shift).
5 workdays/week.
· **Environment** Flow rate of receiving surface water: > 18000m3/d
· **Physical parameters**
· **Physical state** Liquid
· **Concentration of the substance in the mixture** The substance is main component.
· **Used amount per time or activity** 5500 tons per year
· **Other operational conditions** Protect against electrostatic charges.
· **Other operational conditions affecting environmental exposure** No special measures required.
· **Other operational conditions affecting worker exposure**
Avoid contact with eyes.
Take precautionary measures against static discharge.
Keep away from sources of ignition - No smoking.
· **Risk management measures** Ensure that suitable extractors are available on processing machines
· **Worker protection**
Ensure adequate ventilation
Do not inhale gases / fumes / aerosols.
· **Organisational protective measures** Keep good industrial hygiene.
· **Technical protective measures**
efficiency of local exhaust ventilation (LEV): 95%
Ensure sufficient ventilation at working area (1-3 times air exchange per hour).
Provide explosion-proof electrical equipment.
Keep containers tightly sealed.

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Ensure that suitable extractors are available on processing machines

· **Personal protective measures**
Wear protective clothing.
Safety glasses
Do not inhale gases / fumes / aerosols.
Avoid contact with the eyes.
Tightly sealed safety glasses.
Solvent resistant gloves
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Use breathing protection in case of insufficient ventilation.
Wear suitable protective gloves and protective goggles /face protection during work.

· **Environmental protection measures**
· **Air** Avoid emissions to the air
· **Water**
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%):87
Do not allow to reach sewage system.
· **Disposal measures** Disposal must be made according to official regulations.
· **Disposal procedures**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
· **Waste type** Partially emptied and uncleaned packaging
· **Exposure estimation**
· **Worker (dermal)** The calculated value is smaller than the DNEL.
· **Worker (inhalation)** The calculated value is smaller than the DNEL.
· **Environment** The calculated value is smaller than the PNEC.
· **Consumer** Not relevant for this Exposure Scenario.