

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Trade name or designation of the mixture Lötwasser / Soldering Liquid
Registration number -
Synonyms Nr. 1V
Product code 8267
Issue date 19-May-2015
Version number 1.0
Revision date 19-May-2015
Supersedes date 19-May-2015
Product use Public use

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses Soft soldering
Uses advised against None known.

1.3. Details of the supplier of the safety data sheet

Company name STANNOL GmbH
Oskarstr. 3 - 7
42283 Wuppertal
Deutschland
Telephone number +49 (0) 202 585 - 732 (Mo. - Fr. 08:00 - 16:00)
Fax +49 (0) 202 585 - 155
Homepage www.stannol.de
E-mail HSE@RLE.de
1.4 Emergency telephone number +49 (0) 202 585 - 732 (Mo. - Fr. 08:00 - 16:00)

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture**

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Directive 67/548/EEC or 1999/45/EC as amended

Classification Xi;R36/37/38, N;R51/53

The full text for all R-phrases is displayed in section 16.

Classification according to Regulation (EC) No 1272/2008 as amended**Health hazards**

| | | |
|--|---|---|
| Skin corrosion/irritation | Category 1B | H314 - Causes severe skin burns and eye damage. |
| Specific target organ toxicity - single exposure | Category 3 respiratory tract irritation | H335 - May cause respiratory irritation. |

Environmental hazards

| | | |
|--|------------|---|
| Hazardous to the aquatic environment, long-term aquatic hazard | Category 2 | H411 - Toxic to aquatic life with long lasting effects. |
|--|------------|---|

2.2. Label elements**Label according to Regulation (EC) No. 1272/2008 as amended**

Contains: Zinc chloride

Hazard pictograms

Signal word Danger

Hazard statements

| | |
|------|--|
| H314 | Causes severe skin burns and eye damage. |
| H335 | May cause respiratory irritation. |
| H411 | Toxic to aquatic life with long lasting effects. |

Precautionary statements

Prevention

| | |
|------|--|
| P102 | Keep out of reach of children. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P273 | Avoid release to the environment. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |

Response

| | |
|-------------|---|
| P101 | If medical advice is needed, have product container or label at hand. |
| P308 + P311 | IF exposed or concerned: Call a POISON CENTER/doctor. |

Storage

| | |
|------|------------------|
| P405 | Store locked up. |
|------|------------------|

Disposal

| | |
|------|---|
| P501 | Dispose of contents/container to an approved waste disposal plant |
|------|---|

Supplemental label information None.

2.3. Other hazards The mixture contains no substance that fulfils the criteria of a PBT- or vPvB substance.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General information

| Chemical name | % | CAS-No. / EC No. | REACH Registration No. | Index No. | Notes |
|---------------|----------|------------------------|------------------------|--------------|--|
| Zinc chloride | 5 - < 10 | 7646-85-7 231-592-0 | - | 030-003-00-2 | H335: C ≥ 5%, R34: C ≥ 10 %, R36/37/38: 5 % ≤ C < 10 % |

Classification: **DSD:** C;R34, Xn;R22, N;R50/53
CLP: Acute Tox. 4;H302, Skin Corr. 1B;H314, STOT SE 3;H335, Aquatic Acute 1;H400, Aquatic Chronic 1;H410

List of abbreviations and symbols that may be used above:

CLP: Regulation No. 1272/2008.

DSD: Directive 67/548/EEC.

Composition comments The full text for all R- and H-phrases is displayed in section 16.

SECTION 4: First aid measures

General information Take off contaminated clothing and shoes immediately. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

4.1. Description of first aid measures

| | |
|---------------------|--|
| Inhalation | Move to fresh air. For breathing difficulties, oxygen may be necessary. Call a physician if symptoms develop or persist. |
| Skin contact | Remove and isolate contaminated clothing and shoes. Wash off immediately with plenty of water. Chemical burns must be treated by a physician. Wash clothing separately before reuse. |
| Eye contact | Flush eyes immediately with large amounts of water. Get medical attention if irritation develops and persists. |
| Ingestion | Rinse mouth. Do not induce vomiting. Get medical attention if symptoms occur. |

4.2. Most important symptoms and effects, both acute and delayed May cause severe irritation or burns to the eyes, skin, gastrointestinal tract, and respiratory system.

4.3. Indication of any immediate medical attention and special treatment needed Treat symptomatically.

SECTION 5: Firefighting measures

General fire hazards Not available.

5.1. Extinguishing media

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Fire may produce irritating, corrosive and/or toxic gases.

5.3. Advice for firefighters

Special protective equipment for firefighters Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

Special fire fighting procedures Not available.

Specific methods

Move containers from fire area if you can do so without risk.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Keep unnecessary personnel away. Avoid contact with skin. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. For personal protection, see section 8.

For emergency responders Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

6.2. Environmental precautions

Avoid release to the environment. Refer to special instructions/safety data sheets. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible and place into containers. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills in original containers for re-use.

6.4. Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid contact with skin. Avoid contact with eyes. Wash hands thoroughly after handling. Use appropriate container to avoid environmental contamination.

7.2. Conditions for safe storage, including any incompatibilities

Store in original tightly closed container. Use appropriate container to avoid environmental contamination. Use care in handling/storage.

7.3. Specific end use(s)

Soft soldering

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

UK. EH40 Workplace Exposure Limits (WELs)

| Components | Type | Value | Form |
|------------------------------------|------|----------------------|-------|
| Ammonium chloride (CAS 12125-02-9) | STEL | 20 mg/m ³ | Fume. |
| | TWA | 10 mg/m ³ | Fume. |
| Zinc chloride (CAS 7646-85-7) | STEL | 2 mg/m ³ | Fume. |
| | TWA | 1 mg/m ³ | Fume. |

Biological limit values

No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures

Follow standard monitoring procedures.

Derived no-effect level (DNEL)

| Components | Type | Route | Value | Form |
|------------------------------------|-------------------------------------|--------------|-------------------------|-------------|
| Ammonium chloride (CAS 12125-02-9) | Consumer | Dermal | 0.0552 mg/g | |
| Comments: | Long term exposure systemic effects | Inhalation | 9.4 mg/m ³ | |
| Comments: | Long term exposure systemic effects | Oral | 0.0552 mg/g | |
| Comments: | Long term exposure systemic effects | Professional | Dermal | 0.1289 mg/g |
| Comments: | Long term exposure systemic effects | Inhalation | 43.97 mg/m ³ | |
| Comments: | Long term exposure systemic effects | | | |

Predicted no effect concentrations (PNECs)

| Components | Type | Route | Value | Form |
|------------------------------------|----------------------|------------|--------------|------|
| Ammonium chloride (CAS 12125-02-9) | Not applicable | Freshwater | 0.25 mg/l | |
| Comments: | Fresh water | Seawater | 0.025 mg/l | |
| | | Sediment | 0.0009 mg/g | |
| Comments: | Fresh water | Sediment | 0.00009 mg/g | |
| Comments: | Seawater | Soil | 0.0507 mg/g | |
| | | STP | 0.0131 mg/g | |
| | | Water | 0.43 mg/l | |
| Comments: | Intermittent release | | | |

8.2. Exposure controls

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

| | |
|--|---|
| General information | Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment. |
| Eye/face protection | Avoid contact with eyes. Wear chemical goggles and face shield. |
| Skin protection | |
| - Hand protection | Wear appropriate chemical resistant gloves. |
| - Other | Avoid contact with the skin. Wear chemical protective equipment that is specifically recommended by the manufacturer. |
| Respiratory protection | When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. |
| Thermal hazards | Wear appropriate thermal protective clothing, when necessary. |
| Hygiene measures | When using, do not eat, drink or smoke. Do not get this material on clothing. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. |
| Environmental exposure controls | Environmental manager must be informed of all major releases. |

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

| | |
|-------------------------------------|----------------|
| Physical state | Liquid. |
| Form | Liquid. |
| Colour | Colourless. |
| Odour | Not available. |
| Odour threshold | Not available. |
| pH | 6 (@ 10%) |
| Melting point/freezing point | Not available. |

| | |
|---|------------------------|
| Initial boiling point and boiling range | 100 °C (212 °F) |
| Flash point | Not applicable |
| Evaporation rate | Not available. |
| Flammability (solid, gas) | Not applicable. |
| Upper/lower flammability or explosive limits | |
| Flammability limit - lower (%) | Not available. |
| Flammability limit - upper (%) | Not available. |
| Vapour pressure | Not available. |
| Vapour density | Not available. |
| Relative density | Not available. |
| Solubility(ies) | |
| Solubility (water) | Soluble |
| Solubility (other) | Not available. |
| Partition coefficient (n-octanol/water) | Not available. |
| Auto-ignition temperature | Not available. |
| Decomposition temperature | Not available. |
| Viscosity | Not available. |
| Explosive properties | Not available. |
| Oxidizing properties | Not available. |
| 9.2. Other information | |
| Density | 1.09 g/cm ³ |
| VOC (CH) | < 3 % |

SECTION 10: Stability and reactivity

| | |
|---|--|
| 10.1. Reactivity | Avoid contact with oxidising agents (e.g. nitric acid, peroxides and chromates). |
| 10.2. Chemical stability | Material is stable under normal conditions. |
| 10.3. Possibility of hazardous reactions | No dangerous reaction known under conditions of normal use. |
| 10.4. Conditions to avoid | Contact with incompatible materials. |
| 10.5. Incompatible materials | Acids. Ammonia. Chlorine. |
| 10.6. Hazardous decomposition products | Nitrogen oxides (NO _x). |

SECTION 11: Toxicological information

| | |
|---|---|
| General information | Occupational exposure to the substance or mixture may cause adverse effects. |
| Information on likely routes of exposure | |
| Inhalation | May cause irritation to the respiratory system. |
| Skin contact | Corrosive effects. |
| Eye contact | Causes serious eye damage. |
| Ingestion | Causes digestive tract burns. |
| Symptoms | May cause severe irritation or burns to the eyes, skin, gastrointestinal tract, and respiratory system. |

11.1. Information on toxicological effects

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

| Product | Species | Test results |
|-------------------------------|----------------|---------------------------|
| Lötzwasser / Soldering Liquid | | |
| <u>Acute</u> | | |
| Oral | | > 5000 mg/kg (calcd. ATE) |

| Components | Species | Test results |
|---|---|-------------------|
| Zinc chloride (CAS 7646-85-7) | | |
| Acute | | |
| Oral | | |
| LD50 | Rat | 1100 - 1260 mg/kg |
| Skin corrosion/irritation | Causes severe skin burns and eye damage. | |
| Serious eye damage/eye irritation | Causes serious eye damage. | |
| Respiratory sensitisation | Based on available data, the classification criteria are not met. | |
| Skin sensitisation | Based on available data, the classification criteria are not met. | |
| 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. | |
| Specific target organ toxicity - single exposure | May cause irritation to the respiratory system. | |
| Specific target organ toxicity - repeated exposure | Based on available data, the classification criteria are not met. | |
| Aspiration hazard | Based on available data, the classification criteria are not met. | |
| Mixture versus substance information | No information available. | |
| Other information | The emerging solder fumes must be exhausted | |

SECTION 12: Ecological information

12.1. Toxicity Toxic to aquatic life with long lasting effects.

| Components | Species | Test results |
|-------------------------------|------------------------------------|------------------------------|
| Zinc chloride (CAS 7646-85-7) | | |
| Aquatic | | |
| Crustacea | EC50 Invertebrates (Invertebrates) | 0.147 - 0.413 mg/l, 48 hours |
| Fish | LC50 Oncorhynchus mykiss | 0.169 mg/l, 96 hours |
| | Pimephales promelas | 0.78 mg/l, 96 hours |

12.2. Persistence and degradability No data is available on the degradability of this product.

12.3. Bioaccumulative potential No data available.

Partition coefficient n-octanol /water (log Kow) Not available.

Bioconcentration factor (BCF) Not available.

12.4. Mobility in soil No data available.

12.5. Results of PBT and vPvB assessment The mixture contains no substance that fulfils the criteria of a PBT- or vPvB substance.

12.6. Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

| | |
|-------------------------------------|---|
| Residual waste | Dispose of in accordance with local regulations. Avoid discharge into water courses or onto the ground. |
| Contaminated packaging | Empty containers should be taken to an approved waste handling site for recycling or disposal. |
| EU waste code | The Waste code should be assigned in discussion between the user, the producer and the waste disposal company. |
| | 11 05 04 |
| | 15 01 10 |
| Disposal methods/information | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. After recovery of solvent dispose of residue as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations. |
| Special precautions | Dispose in accordance with all applicable regulations. |

SECTION 14: Transport information

General IMDG Regulated Marine Pollutant.

ADR

14.1. UN number UN1840
14.2. UN proper shipping name Zinc chloride solution
14.3. Transport hazard class(es)
Class 8
Subsidiary risk -
Label(s) 8
Hazard No. (ADR) 80
Tunnel restriction code E
14.4. Packing group III
14.5. Environmental hazards Yes
14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Special provisions Not available.
Classification code C1

IATA

14.1. UN number UN1840
14.2. UN proper shipping name Zinc chloride solution
14.3. Transport hazard class(es)
Class 8
Subsidiary risk -
14.4. Packing group III
Packaging instructions 852
Packaging instructions cargo only 856
14.5. Environmental hazards Yes
ERG Code 8L
14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Other information

Passenger and cargo aircraft Allowed.
Cargo aircraft only Allowed.
Maximum net quantity packaging - Passenger and cargo aircraft 5 L
Maximum net quantity packaging cargo only 60 L
Maximum net quantity packaging - Limited quantity 1 L

Special provisions A3

IMDG

14.1. UN number UN1840
14.2. UN proper shipping name Zinc chloride solution
14.3. Transport hazard class(es)
Class 8
Subsidiary risk -
14.4. Packing group III
14.5. Environmental hazards
Marine pollutant Yes
EmS F-A, S-B
14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Special provisions Not available.

SECTION 15: Regulatory information

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

EU regulations

Not applicable.

Restrictions on use

Not applicable.

Other regulations

The product is classified and labelled in accordance with EC directives or respective national laws. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006.

Other EU regulations

Directive 94/33/EC on the protection of young people at work, as amended

Zinc chloride (CAS 7646-85-7)

EU Directive 96/82/EC - Control of Major Accident Hazards: Threshold quantities established for the application of Articles 6 and 7

Category: 9b

National regulations

Follow national regulation for work with chemical agents.

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations

AC: Article category.
acc., acc.to: according, according to.
ACGIH: American Conference of Governmental Industrial Hygienists.
AFNOR: French Institute for Standards (Association Française de Normalisation).
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures).
ADR: European agreement concerning the international carriage of dangerous goods by road (Accord européen relatif transport des marchandises dangereuses par route).
AGW: Occupational threshold limit value (Arbeitsplatzgrenzwert – Germany).
AICS: Australian Inventory of Chemical Substances.
ANSI: American National Standards Institute.
AOEL: Acceptable Operator Exposure Level.
AOX: adsorbable organic halogen compounds.
approx.: approximately.
ASTM: ASTM International.
ATE: Acute Toxicity Estimate according to REGULATION (EC) No 1272/2008 (CLP).
BAM: Federal Institute for Materials Research and Testing, Germany (Bundesanstalt für Materialforschung und -prüfung).
Maximum permissible concentration of biological working substances (BAT: Biologische Arbeitsstofftoleranzwerte).
BAuA: Federal Institute for Occupational Health and Safety, Germany (Bundesanstalt für Arbeitsschutz und Arbeitsmedizin).
BCF: Bio-concentration factor.
BET: Brunauer-Emmett-Teller.
BLV: Biological Limit Value.
BLV: Biological Limit Value (BGW: Biologischer Grenzwert, Austria).
BMGV: Biological Monitoring Guidance Value (EH40,UK).
BSI: British Standards Institution.
BS: British Standard.
BOD5: Biochemical oxygen demand within 5 days.
BOD: Biochemical oxygen demand.
bw: Body weight.
calcd.: calculated.
CAS: Chemical Abstract Service.
CEN: European Committee for Standardization (Comité Européen de Normalisation).
CESIO: European Committee on Organic Surfactants and their Intermediates (Comité Européen des Agents de Surface et de leurs Intermédiaires Organiques).
ChemRRV: Ordinance on the risk reduction related to chemical products (ChemRRV: Chemikalien-Risikoreduktions-verordnung, Switzerland).
CLP: Classification, Labeling and Packaging REGULATION (EC) No 1272/2008 on classification, labeling and packaging of substances and mixtures.
CMR: Substances classified as Carcinogenic, Mutagenic or toxic for Reproduction.
CNS: Central Nervous System.
CNT: Carbon nanotubes.
COD: Chemical Oxygen Demand.
CSA: Chemical Safety Assessment.
CSR: Chemical Safety Report.
DETEC: Swiss Federal Department of the Environment, Transport, Energy and Communications.

DIN: German Standards Institute / German industrial norm (Deutsches Institut für Normung / Deutsche Industrienorm).
 DMEL: Derived Minimum Effect Level.
 DNEL: Derived No Effect Level.
 DOC: Dissolved organic carbon.
 DPD: Directive 1999-45-EC / Dangerous Preparations Directive.
 DSD: Directive 67/548-EC / Dangerous Substances Directive.
 DSL: Canada, Domestic Substances List.
 DU: Downstream User.
 dw: dry weight.
 e.g.: For example, for instance.
 EBW: Exposure Based Waiving.
 EC: European Community.
 EC50: Effective Concentration 50%.
 ECHA: European Chemical Agency.
 EINECS: European Inventory of Existing Commercial Chemical Substances.
 ELINCS: European List of Notified Chemical Substances.
 EN: European norm.
 ENCS: Japan, Inventory of Existing and New Chemical Substances.
 EPA: United States Environmental Protection Agency.
 ERC: Environmental release category.
 ES: Exposure scenario.
 EUSES: European Union System for the Evaluation of Substances.
 EWC/EWL: European Waste Catalogue.
 GCL: General concentration limit.
 gen.: general.
 GHS: Globally Harmonized System of Classification and Labeling of Chemicals.
 GLP: Good Laboratory Practice.
 GW/VL: Occupational exposure limit value.
 GW-kw: Occupational exposure limit value - short term.
 GW-M/VL-M: Occupational exposure limit value – "Ceiling".
 GWP: Global Warming Potential.
 HPV: High Production Volume Chemicals.
 HEPA: High Efficiency Particulate Air.
 IARC: International Agency for Research on Cancer.
 IATA: International Air Transport Association.
 IBC: Intermediate Bulk Container.
 IBC Code: International Bulk Chemical (Code) (International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk).
 ICAO: International Civil Aviation Organization.
 IC50: Inhibition Concentration 50%.
 IECSC: Inventory of Existing Chemical Substances in China.
 IMDG Code: International Maritime Dangerous Goods Code.
 IMO: International Maritime Organization.
 incl.: including, inclusive.
 ISO: International Standards Organization.
 IUCLID: International Uniform Chemical Information Database.
 IUPAC: International Union for Pure Applied Chemistry.
 KECI: Korea Existing Chemicals Inventory.
 LCA: Life Cycle Assessment.
 LC: Lethal Concentration.
 LC50: Lethal Concentration 50%.
 LCLo: Lowest published lethal concentration.
 LD50: Lethal Dose 50%.
 LEV: Local exhaust ventilation.
 LOAEL: Lowest observed adverse effect level.
 LOEC: Lowest observable effect concentration.
 LOEL: Lowest observable effect level.
 LPV: Low Production Volume Chemicals.
 LQ: Limited Quantities.
 Air Quality Control Regulation (LRV: Luftreinhalteverordnung, Switzerland).
 TLV-STEL: Threshold limit value - Short-term exposure limit / Technical reference concentration - short-time value (TRK-Kzw = Technische Richtkonzentration - Kurzzeitwert).
 Maximum allowable workplace concentration – instantaneous value (MAK-Mow: Maximale Arbeitsplatzkonzentration – Momentanwert, Austria)
 Maximum allowable workplace concentration – daily mean value / Technical standard concentration – daily mean value (MAK-Tmw, TRK-Tmw : Maximale Arbeitsplatzkonzentration - Tagesmittelwert / TRK-Tmw = Technische Richtkonzentration – Tagesmittelwert, Austria).

MAK: Threshold limit values Germany (Maximale Arbeitsplatzkonzentration - DFG).
 MARPOL: International Convention for the Prevention of Pollution From Ships.
 MTD: Maximum tolerated dose.
 MWCNT: Multi-walled carbon nanotubes.
 n.a.: not applicable.
 N/A: Not available.
 n.d.: not determined.
 NLP: No Longer Polymers.
 NDSL: Canada, Non-Domestic Substances List.
 NF: French Norm (See AFNOR).
 NFPA: National Fire Protection Association.
 NIOSH: National Institute for Occupational Safety & Health.
 NOAEC: No Observed Adverse Effect Concentration.
 NOAEL: No observed adverse effect level.
 NOEC: No observed effect concentration.
 NOEL: No observed effect level.
 NTP: National Toxicology Program.
 NZIoC: New Zealand Inventory of Chemicals.
 ODP: Ozone Depletion Potential.
 OECD: Organization for Economic Cooperation and Development.
 OEL: Occupational Exposure Limit.
 org.: organic.
 OSHA: Occupational Safety & Health Administration.
 PAH: Polycyclic Aromatic Hydrocarbons.
 PBT: Persistent, bioaccumulative, toxic.
 PC: Product category.
 PE: Polyethylene.
 PEC: Predicted Environmental Concentration.
 PEL: Permissible Exposure Limit.
 PIC: Prior Informed Consent.
 PICCS: Philippines Inventory of Commercial Chemical Substances.
 PNEC: Predicted No Effect Concentration.
 POCP: Photochemical ozone creation potential (Photochemisches Ozonbildungspotenzial).
 POP: Persistent Organic Pollutant.
 PPORD: Product and Process Oriented Research and Development.
 PPE: Personal Protective Equipment.
 PROC: Process category.
 RA: Risk Assessment.
 RAR: Risk Assessment Report.
 RCRA: Resource Conservation Recovery Act.
 REACH: Registration, Evaluation and Authorization of Chemicals (REGULATION (EC) No 1907/2006 concerning Registration, Evaluation Authorization and Restriction of Chemicals).
 RID: Regulations concerning the international carriage of dangerous goods by rail (Règlement International concernant le transport de marchandises dangereuses par chemin de fer).
 RMM: Risk Management Measure.
 RTECS: Registry of Toxic Effects of Chemical Substances.
 QSAR: Quantitative Structure Activity Relation.
 SARA: Superfund Amendments and Reauthorization Act.
 SADT: Self-Accelerating Decomposition Temperature.
 SCL: Specific concentration limit.
 SEA: socio economic analysis.
 STEL: Short-term Exposure Limit.
 STP: Sewage treatment plant.
 SU: Sector of use.
 SVHC: Substance of Very High Concern.
 SWCNT: single-walled carbon nanotubes.
 ThOD: Theoretical oxygen demand.
 TOC: Total Organic Carbon.
 TLV: Threshold Limit Value.
 TRA: Targeted Risk Assessment.
 TSCA: Toxic Substance Control Act.
 TWA: Time Weighted Average.
 UC: Use category.
 UDS: Use descriptor system.
 UEC: Use and exposure categories.
 UN: United Nations.
 UN RTDG: United Nations Recommendations on the Transport of Dangerous Goods.
 UVCB: Unknown or Variable Composition, Complex Reaction Products, and Biological Materials.

Regulation on combustible liquids (VbF: Verordnung über brennbare Flüssigkeiten, Austria).
Regulation of the Austria Minister for Labor and Social Affairs regarding health surveillance at the workplace (VGÜ = Verordnung des Bundesministers für Arbeit und Soziales über die Gesundheitsüberwachung am Arbeitsplatz).
VOC: Volatile organic compounds.
vPvB: very Persistent, very Bioaccumulative.
WEL-TWA: Workplace Exposure Limit-Long term exposure limit (8-hour TWA(=time weighted average)reference period).
WEL-STEL: Workplace Exposure Limit-Short term exposure limit (15-minute reference period).
WoE: Weight of evidence.
WHMIS: Workplace Hazardous Materials Information System.
WHO: World Health Organization.
wwt: wet weight.
Not available.

References

Information on evaluation method leading to the classification of mixture

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

Full text of any statements or R-phrases and H-statements under Sections 2 to 15

R22 Harmful if swallowed.
R34 Causes burns.
R36/37/38 Irritating to eyes, respiratory system and skin.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H335 May cause respiratory irritation.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

Revision information

None.

Training information

Follow training instructions when handling this material.

Disclaimer

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.