

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

Trade name or designation of the mixture Lötflussmittel / Flux
Registration number -
Synonyms WF300F / WF300S
Product code 8002
Issue date 14-May-2015
Version number 1.0
Revision date 15-May-2015
Supersedes date 14-May-2015
Product use Industrial 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 R43

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

Skin sensitisation

Category 1

H317 - May cause an allergic skin reaction.

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

Contains: 2,4,7,9-tetramethyldec-5-yne-4,7-diol, Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H -isothiazol-3-one [EC no. 220-239-6] (3:1)

Hazard pictograms**Signal word**

Warning

Hazard statements

H317

May cause an allergic skin reaction.

Precautionary statements**Prevention**

P280

Wear protective gloves.

ResponseP333 + P313
P363If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.**Storage**

None.

Disposal

None.

Supplemental label information

None.

2.3. Other hazards

The product contains Poly(oxy-1,2-ethanediyl), .alpha.-(nonylphenyl)-.omega.-hydroxy-, branched with a concentration of > 0.1 %.

SECTION 3: Composition/information on ingredients**3.2. Mixtures****General information**

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Adipic acid	1 - < 3	124-04-9 204-673-3	01-2119457561-38-XXXX	607-144-00-9	
Classification:		DSD: Xi;R36			
		CLP: Eye Irrit. 2;H319			
Glutaric acid	1 - < 3	110-94-1 203-817-2	-	-	
Classification:		DSD: Xi;R36			
		CLP: Eye Irrit. 2;H319			
2,4,7,9-tetramethyldec-5-yne-4,7-diol	0.1 - < 1	126-86-3 204-809-1	01-2119954390-39-XXXX	-	
Classification:		DSD: Xi;R41, R43, R52/53			
		CLP: Skin Sens. 1;H317, Eye Dam. 1;H318, Aquatic Chronic 3;H412			
Poly(oxy-1,2-ethanediyl), .alpha.-(nonylphenyl)-.omega.-hydroxy-, branched	0.1 - < 1	68412-54-4 500-209-1	-	-	SVHC
Classification:		DSD: Xi;R36, R52/53			
		CLP: Eye Irrit. 2;H319, Aquatic Chronic 3;H412			
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)	0.0015 - < 0.01	55965-84-9 -	-	613-167-00-5	Skin Irrit. 2; H315: 0,06% ≤ C < 0,6%; Eye Irrit. 2; H319: 0,06% ≤ C < 0,6%; Skin Sens. 1; H317: C ≥ 0,0015%; Skin Corr. 1B; H314: C ≥ 0,6%; C ≥ 0,0015% R43, 0,06% ≤ C < 0,6% Xi; R36/38, C ≥ 0,6% C; R34
Classification:		DSD: T;R23/24/25, C;R34, R43, N;R50/53			
		CLP: Acute Tox. 3;H301, Acute Tox. 3;H311, Skin Corr. 1B;H314, Skin Sens. 1;H317, Acute Tox. 3;H331, 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.

SVHC: Substance of Very High Concern.

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

SECTION 4: First aid measures

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

4.1. Description of first aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist. If breathing is difficult, give oxygen.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Take off contaminated clothing and wash before reuse. Get medical attention if irritation develops and persists.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Ingestion Rinse mouth. Get medical attention if symptoms occur.

4.2. Most important symptoms and effects, both acute and delayed May cause allergic skin reaction.

4.3. Indication of any immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically.

SECTION 5: Firefighting measures

General fire hazards No unusual fire or explosion hazards noted.

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 During fire, gases hazardous to health may be formed.

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. Keep people away from and upwind of spill/leak. Wear appropriate personal protective equipment. Ensure adequate ventilation. Keep out of low areas. 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 Prevent further leakage or spillage if safe to do so. For large (industrial) releases, prevent spill from entering a waterway. Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up This product is miscible in water.

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. Following product recovery, flush area with water. Prevent entry into waterways, sewer, basements or confined areas.

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 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. Avoid contact with skin and eyes. Avoid prolonged exposure. Provide adequate ventilation. Do not empty into drains. Wear appropriate personal protective equipment.

7.2. Conditions for safe storage, including any incompatibilities

Store in original tightly closed container. Store in accordance with local/regional/national/international regulation. Use care in handling/storage.

7.3. Specific end use(s)

Flux for soldering

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits No exposure limits noted for ingredient(s).

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
2,4,7,9-tetramethyldec-5-yne-4,7-diol (CAS 126-86-3)	Consumer	Dermal	0.75 mg/kg/BW/day	
Comments:	Short term exposure - systemic effects	Dermal	0.25 mg/kg/BW/day	
Comments:	Long term exposure systemic effects	Inhalation	1.29 mg/m3	
Comments:	Short term exposure - systemic effects	Inhalation	0.43 mg/m3	
Comments:	Long term exposure systemic effects	Oral	0.25 mg/kg/BW/day	
Comments:	Long term exposure systemic effects	Professional Dermal	1.5 mg/kg/BW/day	
Comments:	Short term exposure - systemic effects	Dermal	0.5 mg/kg/BW/day	
Comments:	Long term exposure systemic effects	Inhalation	5.28 mg/m3	
Comments:	Short term exposure - systemic effects	Inhalation	1.76 mg/m3	
Comments:	Long term exposure systemic effects	Consumer Dermal	19 mg/kg/BW/day	
Comments:	Short term exposure - systemic effects	Dermal	19 mg/kg/BW/day	
Comments:	Long term exposure systemic effects	Inhalation	65 mg/m3	
Comments:	Long term exposure systemic effects	Inhalation	65 mg/m3	
Comments:	Short term exposure - systemic effects	Oral	19 mg/kg/BW/day	
Comments:	Long term exposure systemic effects	Oral	19 mg/kg/BW/day	
Comments:	Short term exposure - systemic effects	Professional Dermal	38 mg/kg/BW/day	
Comments:	Short term exposure - systemic effects	Dermal	38 mg/kg/BW/day	
Comments:	Long term exposure systemic effects	Inhalation	5 mg/m3	
Comments:	Short term exposure - local effects	Inhalation	5 mg/m3	
Comments:	Long term exposure - local effects	Inhalation	264 mg/m3	
Comments:	Short term exposure - systemic effects	Inhalation	264 mg/m3	
Comments:	Long term exposure systemic effects			

Predicted no effect concentrations (PNECs)

Components	Type	Route	Value	Form		
2,4,7,9-tetramethyldec-5-yne-4,7-diol (CAS 126-86-3)	Not applicable	Freshwater	0.04 mg/l			
		Seawater	0.004 mg/l			
		Sediment	0.32 mg/kg			
	Comments:	Fresh water				
	Comments:	Seawater	Sediment	0.032 mg/kg		
			Soil	0.028 mg/kg		
			STP	7 mg/l		
	Comments:	Intermittent release	Water	0.4 mg/l		
			Not applicable	Freshwater	0.126 mg/l	
				Seawater	0.0126 mg/l	
Sediment	0.484 mg/kg					
Comments:	Fresh water					
Comments:	Seawater	Sediment	0.0484 mg/kg			
		Soil	0.0228 mg/kg			
		STP	59.1 mg/l			
Comments:	Intermittent release	Water	0.46 mg/l			

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 wash fountain is recommended.

Eye/face protection

Avoid contact with eyes. Wear eye/face protection.

Skin protection

- Hand protection

The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other.

Wear protective gloves.

- Other

Avoid contact with the skin. Wear suitable protective clothing.

Respiratory protection

Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

Hygiene measures

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

2.5 (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 available.
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	1.01 g/cm ³

SECTION 10: Stability and reactivity

10.1. Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
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	None under normal conditions.
10.5. Incompatible materials	None known.
10.6. Hazardous decomposition products	No hazardous decomposition products are known.

SECTION 11: Toxicological information

General information Occupational exposure to the substance or mixture may cause adverse effects.

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	May cause sensitisation by skin contact.
Eye contact	Not available.
Ingestion	Expected to be a low ingestion hazard.

Symptoms May cause allergic skin reaction.

11.1. Information on toxicological effects

Acute toxicity	Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation	Based on available data, the classification criteria are not met.
Respiratory sensitisation	Based on available data, the classification criteria are not met.
Skin sensitisation	May cause sensitisation by skin contact.
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	Based on available data, the classification criteria are not met.

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	May cause allergic skin reaction.

SECTION 12: Ecological information

12.1. Toxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

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

Biodegradability

Percent degradation (Aerobic biodegradation)

Glutaric acid 100 % Readily biodegradable, (OECD 301 E)
Test Duration: 7 days

12.3. Bioaccumulative potential No data available.

Partition coefficient n-octanol /water (log Kow)

Adipic acid 0.08
Glutaric acid -0.256, OECD 107
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H -isothiazol-3-one [EC no. 220-239-6] (3:1) -0.71 - 0.75

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. 4-Nonylphenol, branched and linear have been identified as substances of very high concern due to the endocrine disrupting properties which cause probable serious effects to the environment

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. 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

ADR

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

SECTION 15: Regulatory information

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

EU regulations

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Poly(oxy-1,2-ethanediyl), .alpha.-(nonylphenyl)-.omega.-hydroxy-, branched (CAS 68412-54-4)

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 Not applicable.

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

Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H -isothiazol-3-one [EC no. 220-239-6] (3:1) (CAS 55965-84-9)

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

Not applicable

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

R23/24/25 Toxic by inhalation, in contact with skin and if swallowed.

R34 Causes burns.

R36 Irritating to eyes.

R41 Risk of serious damage to eyes.

R43 May cause sensitisation by skin contact.

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

H301 Toxic if swallowed.

H311 Toxic in contact with skin.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H319 Causes serious eye irritation.

H331 Toxic if inhaled.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

H412 Harmful to aquatic life with long lasting effects.

None.

Revision information

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.