



SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Issuing Date 04-Nov-2014

Revision date 23-Jan-2023

Revision Number 3

1. Identification

1.1. Product identifier

Catalogue Number 6764003, 6764004

Product Name TBD-2 Decalcifier

Pure substance/mixture Mixture

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

Recommended use In vitro diagnostic

Uses advised against No information available

1.3. Details of the supplier of the safety data sheet

Manufacturer

Richard-Allan Scientific
4481 Campus Drive
Kalamazoo, MI 49008
1-800-522-7270

For further information, please contact

1.4. Emergency telephone number

Emergency Telephone No information available

Emergency Telephone - §45 - (EC)1272/2008

Europe	112
Austria	CHEMTREC Vienna, Austria: 43-13649237
Belgium	CHEMTREC Brussels, Belgium: 32-28083237
Denmark	CHEMTREC Denmark: 45-69918573
Finland	CHEMTREC Finland: 358-942419014
France	CHEMTREC France: 33-975181407
Germany	CHEMTREC Germany: 0800-181-7059
Ireland	CHEMTREC Ireland: 353-19014670
Italy	CHEMTREC Italy: 800-789-767
Netherlands	CHEMTREC Netherlands: 31-858880596
Norway	CHEMTREC Norway: 47-21930678
Portugal	CHEMTREC Portugal: 351-308801773
Spain	CHEMTREC Spain: 900-868538
Sweden	CHEMTREC Sweden: 46-852503403
Switzerland	CHEMTREC Switzerland: 41-435082011
United Kingdom	CHEMTREC United Kingdom: 44-870-8200418

2. Hazard(s) identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Acute toxicity - Inhalation (Dusts/Mists)	Category 4 - (H332)
Skin corrosion/irritation	Category 1 Sub-category B - (H314)
Serious eye damage/eye irritation	Category 2 - (H319)
Chronic aquatic toxicity	Category 3 - (H412)
Corrosive to metals	Category 1 - (H290)

2.2. Label elements

Signal word
Danger

Hazard statements

H314 - Causes severe skin burns and eye damage
H319 - Causes serious eye irritation
H332 - Harmful if inhaled
H412 - Harmful to aquatic life with long lasting effects
H290 - May be corrosive to metals
EUH210 - Safety data sheet available on request

Precautionary Statements - EU (§28, 1272/2008)

P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/protective clothing and eye/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
P310 - Immediately call a POISON CENTER or doctor
P321 - Specific treatment (see .? on this label)
P201 - Obtain special instructions before use
P234 - Keep only in original container
P406 - Store in corrosive resistant stainless steel container with a resistant inner liner

Additional information

This product requires tactile warnings if supplied to the general public. This product requires child resistant fastenings if supplied to the general public.

2.3. Other hazards

No information available

3. Composition/information on ingredients**3.1 Substances**

Not applicable

3.2 Mixtures

Chemical name	EC No	CAS No	Weight-%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH registration number
Water	231-791-2	7732-18-5	67	No data available	No data available
Formic acid	200-579-1	64-18-6	23	Skin Corr. 1A (H314)	No data available

Sodium citrate	200-675-3	68-04-2	9	No data available	No data available
Polyvinyl pyrrolidone	-	9003-39-8	2	No data available	No data available
Toluene	203-625-9	108-88-3	< 0.01	Skin Irrit. 2 (H315) Repr. 2 (H361d) STOT SE 3 (H336) STOT RE 2 (H373) Asp. Tox. 1 (H304) Flam. Liq. 2 (H225)	No data available
N-(Methyl)nonafluorobutanesulfonamide	-	68298-12-4	< 0.01	No data available	No data available
2-Propenoic Acid, 2-[Methyl[(Nonafluorobutyl)Sulfonyl]Amino]Ethyl Ester, Telomer With Methyloxirane Polymer With Oxirane Di-2-Propenoate and Methyloxirane Polymer With Oxirane Mono-Propenoate	-	1017237-78-3	< 0.01	No data available	No data available
2-PROPENOIC ACID, 2-[METHYL[(NONAFLUOROBUTYL)SULFONYL]AMINO]ETHYL ESTER	266-733-5	67584-55-8	< 0.01	No data available	No data available
2-Methoxymethylethoxypropanol	252-104-2	34590-94-8	< 0.01	No data available	No data available
1,1,2,2,3,3,4,4,4-nonafluoro-N-(2-hydroxyethyl)-N-methylbutane-1-sulphonamide	252-043-1	34454-97-2	< 0.01	No data available	No data available

Full text of H- and EUH-phrases: see section 16

4. First-aid measures

4.1. Description of first aid measures

General advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
Inhalation	Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical advice/attention.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get immediate medical advice/attention.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention.
Ingestion	Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get immediate medical advice/attention.
Self-protection of the first aider	Avoid contact with skin, eyes or clothing. Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Avoid breathing vapors or mists. Use personal protective equipment as required. See section 8 for more information.

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

Symptoms Burning sensation. Coughing and/ or wheezing. Difficulty in breathing.

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

Note to physicians Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure.

5. Fire-fighting measures**5.1. Extinguishing media**

Suitable Extinguishing Media Dry chemical. Carbon dioxide (CO₂). Water spray. Alcohol resistant foam.

Unsuitable extinguishing media No information available.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.

5.3. Advice for firefighters

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Personal precautions Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. See section 8 for more information. Take precautionary measures against static discharges. Do not touch or walk through spilled material. Attention! Corrosive material. Keep people away from and upwind of spill/leak. Avoid breathing vapors or mists.

Other information Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so. Refer to protective measures listed in Sections 7 and 8. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

6.3. Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Do not touch or walk through spilled material. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections

See section 8 for more information. See section 13 for more information.

7. Handling and storage**7.1. Precautions for safe handling****Advice on safe handling**

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Avoid breathing vapors or mists.

General hygiene considerations

Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Wash hands before breaks and immediately after handling the product.

7.2. Conditions for safe storage, including any incompatibilities**Storage Conditions**

Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.

7.3. Specific end use(s)**Identified Uses**

Risk Management Methods (RMM) The information required is contained in this Material Safety Data Sheet.

8. Exposure controls/personal protection**8.1. Control parameters****Exposure Limits**

Chemical name	European Union	United Kingdom	France	Spain	Germany
Formic acid 64-18-6	TWA: 5 ppm TWA: 9 mg/m ³	TWA: 5 ppm TWA: 9.6 mg/m ³ STEL: 15 ppm STEL: 28.8 mg/m ³	TWA: 5 ppm TWA: 9 mg/m ³	TWA: 5 ppm TWA: 9 mg/m ³	TWA: 5 ppm TWA: 9.5 mg/m ³
Toluene 108-88-3	TWA: 50 ppm TWA: 192 mg/m ³ *	TWA: 50 ppm TWA: 191 mg/m ³ STEL: 100 ppm STEL: 384 mg/m ³ Sk*	TWA: 20 ppm TWA: 76.8 mg/m ³ STEL: 100 ppm STEL: 384 mg/m ³	TWA: 50 ppm TWA: 192 mg/m ³ STEL: 100 ppm STEL: 384 mg/m ³ vía dérmica*	TWA: 50 ppm TWA: 190 mg/m ³
2-Methoxymethylethoxypropanol 34590-94-8	TWA: 50 ppm TWA: 308 mg/m ³ *	TWA: 50 ppm TWA: 308 mg/m ³ STEL: 150 ppm STEL: 924 mg/m ³ Sk*	TWA: 50 ppm TWA: 308 mg/m ³	TWA: 50 ppm TWA: 308 mg/m ³ vía dérmica*	TWA: 50 ppm TWA: 310 mg/m ³
Chemical name	Italy	Portugal	Netherlands	Finland	Denmark
Formic acid 64-18-6	TWA: 5 ppm TWA: 9 mg/m ³	TWA: 5 ppm TWA: 9 mg/m ³ STEL: 10 ppm	STEL: 5 mg/m ³	TWA: 3 ppm TWA: 5 mg/m ³ STEL: 10 ppm STEL: 19 mg/m ³	TWA: 5 ppm TWA: 9 mg/m ³
Toluene 108-88-3	TWA: 50 ppm TWA: 192 mg/m ³	TWA: 50 ppm TWA: 192 mg/m ³	TWA: 150 mg/m ³ STEL: 384 mg/m ³	TWA: 25 ppm TWA: 81 mg/m ³	TWA: 25 ppm TWA: 94 mg/m ³

	pelle*	STEL: 100 ppm STEL: 384 mg/m ³		STEL: 100 ppm STEL: 380 mg/m ³ iho*	H*
2-Methoxymethylethoxypr opanol 34590-94-8	TWA: 50 ppm TWA: 308 mg/m ³ pelle*	TWA: 50 ppm TWA: 308 mg/m ³ STEL: 150 ppm	TWA: 300 mg/m ³	TWA: 50 ppm TWA: 310 mg/m ³ iho*	TWA: 50 ppm TWA: 309 mg/m ³ H*
Chemical name	Austria	Switzerland	Poland	Norway	Ireland
Formic acid 64-18-6	TWA: 5 ppm TWA: 9 mg/m ³ STEL 5 ppm STEL 9 mg/m ³ Ceiling 5 ppm Ceiling 9 mg/m ³	TWA: 5 ppm TWA: 9.5 mg/m ³ STEL: 10 ppm STEL: 19 mg/m ³	STEL: 15 mg/m ³ TWA: 5 mg/m ³	STEL: 10 ppm STEL: 18 mg/m ³	TWA: 5 ppm TWA: 9 mg/m ³ STEL: 15 ppm STEL: 27 mg/m ³
Toluene 108-88-3	TWA: 50 ppm TWA: 190 mg/m ³ STEL 100 ppm STEL 380 mg/m ³ H*	TWA: 50 ppm TWA: 190 mg/m ³ STEL: 200 ppm STEL: 760 mg/m ³ H*	STEL: 200 mg/m ³ TWA: 100 mg/m ³	STEL: 37.5 ppm STEL: 141 mg/m ³	TWA: 192 mg/m ³ TWA: 50 ppm STEL: 384 mg/m ³ STEL: 100 ppm Sk*
2-Methoxymethylethoxypr opanol 34590-94-8	TWA: 50 ppm TWA: 307 mg/m ³ STEL 100 ppm STEL 614 mg/m ³ H*	TWA: 50 ppm TWA: 300 mg/m ³ STEL: 50 ppm STEL: 300 mg/m ³	STEL: 480 mg/m ³ TWA: 240 mg/m ³	STEL: 75 ppm STEL: 375 mg/m ³	TWA: 50 ppm TWA: 308 mg/m ³ STEL: 150 ppm STEL: 924 mg/m ³ Sk*

Derived No Effect Level (DNEL) No information available.

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Personal protective equipment

Eye/face protection Face protection shield. If splashes are likely to occur, wear safety glasses with side-shields.

Hand protection Wear suitable gloves. Impervious gloves.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Wash hands before breaks and immediately after handling the product.

Environmental exposure controls No information available.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state Liquid
Appearance clear
Color No information available

Odor Characteristic. Pungent.
Odor threshold No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	2.3	
Melting point / freezing point	No data available	None known
Boiling point / boiling range	100 °C	
Flash point	68.78 °C	
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	No data available	None known
Water solubility	No data available	None known
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	270 °C	
Hyphen	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive properties	No information available	
Oxidizing properties	No information available	

9.2. Other information

Softening point No information available
Molecular weight No information available
VOC Content (%) No information available
Liquid Density No information available
Bulk density No information available

10. Stability and reactivity

10.1. Reactivity

Reactivity No information available.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

10.4. Conditions to avoid

Conditions to avoid Exposure to air or moisture over prolonged periods. Excessive heat.

10.5. Incompatible materials

Incompatible materials Oxidizing agent. Acids. Bases.

10.6. Hazardous decomposition products

Hazardous decomposition products Carbon monoxide (CO). Carbon dioxide (CO₂). Hydrogen.

11. Toxicological information**11.1. Information on toxicological effects****Information on likely routes of exposure****Product Information**

Inhalation	Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. May cause irritation of respiratory tract. Harmful by inhalation.
Eye contact	Specific test data for the substance or mixture is not available. Causes burns. (based on components). Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye irritation.
Skin contact	Specific test data for the substance or mixture is not available. May cause irritation. Prolonged contact may cause redness and irritation.
Ingestion	Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms	Redness. Burning. May cause blindness. Coughing and/ or wheezing. May cause redness and tearing of the eyes.
-----------------	--

Numerical measures of toxicity**Acute toxicity**

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	4,995.50 mg/kg
ATEmix (inhalation-dust/mist)	3.8054 mg/l

Unknown acute toxicity	32.7 % of the mixture consists of ingredient(s) of unknown toxicity.
	8.9 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.
	32.7 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.
	32.7 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas).
	32.7 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor).
	10.7 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

Product Information**Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Water	> 90 mL/kg (Rat)		

Formic acid	= 1100 mg/kg (Rat)		= 15 g/m ³ (Rat) 15 min
Polyvinyl pyrrolidone	= 100 g/kg (Rat)		
Toluene	= 2600 mg/kg (Rat)	= 12000 mg/kg (Rabbit)	= 12.5 mg/L (Rat) 4 h
2-PROPENOIC ACID, 2-[METHYL[(NONAFLUOROBUTYL)SULFONYL]AMINO]ETHYLESTER		> 2000 mg/kg (Rat)	
2-Methoxymethylethoxypropano	= 5.35 g/kg (Rat)	= 9500 mg/kg (Rabbit)	

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	May cause skin irritation.
Serious eye damage/eye irritation	Classification based on data available for ingredients. Causes serious eye irritation.
Respiratory or skin sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	No information available.
Reproductive toxicity	No information available.

Chemical name	European Union
Toluene	Repr. 2

STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Other adverse effects	The toxicological properties have not been fully investigated.
Aspiration hazard	No information available.

12. Ecological information

12.1. Toxicity

Ecotoxicity	Harmful to aquatic life with long lasting effects.
Unknown aquatic toxicity	Contains 0.4 % of components with unknown hazards to the aquatic environment.

Product Information				
Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Formic acid	EC50: =26.9mg/L (72h, Desmodesmus subspicatus) EC50: =25mg/L (96h, Desmodesmus subspicatus)	LC50: =175mg/L (24h, Lepomis macrochirus)	-	EC50: 138 - 165.6mg/L (48h, Daphnia magna) EC50: =120mg/L (48h, Daphnia magna)
Sodium citrate	EC50: 18000 - 32000mg/L (96h, Chlorella vulgaris)	LC50: 18000 - 32000mg/L (96h, Poecilia reticulata)	-	EC50: 5600 - 10000mg/L (48h, Daphnia magna)
Toluene	EC50: >433mg/L (96h, Pseudokirchneriella)	LC50: =12.6mg/L (96h, Pimephales promelas)	-	EC50: =11.5mg/L (48h, Daphnia magna) EC50:

	subcapitata) EC50: =12.5mg/L (72h, Pseudokirchneriella subcapitata)	LC50: 5.89 - 7.81mg/L (96h, Oncorhynchus mykiss) LC50: =5.8mg/L (96h, Oncorhynchus mykiss) LC50: 15.22 - 19.05mg/L (96h, Pimephales promelas) LC50: 11.0 - 15.0mg/L (96h, Lepomis macrochirus) LC50: 50.87 - 70.34mg/L (96h, Poecilia reticulata) LC50: 14.1 - 17.16mg/L (96h, Oncorhynchus mykiss) LC50: =28.2mg/L (96h, Poecilia reticulata) LC50: =54mg/L (96h, Oryzias latipes)		5.46 - 9.83mg/L (48h, Daphnia magna)
2-PROPENOIC ACID, 2-[METHYL[(NONAFLUOROBUTYL)SULFONYL]AMINO]ETHYL ESTER	-	LC50: >0.32mg/L (96h, Danio rerio)	-	-
2-Methoxymethylethoxypropanol	-	LC50: >10000mg/L (96h, Pimephales promelas)	-	LC50: =1919mg/L (48h, Daphnia magna)
1,1,2,2,3,3,4,4,4-nonafluoro-N-(2-hydroxyethyl)-N-methylbutane-1-sulphonamide	-	LC50: =25mg/L (96h, Danio rerio)	-	-

12.2. Persistence and degradability

Persistence and degradability No information available.

12.3. Bioaccumulative potential

Bioaccumulation There is no data for this product.

Component Information

Chemical name	Partition coefficient
Formic acid	-0.54
Toluene	2.7
2-PROPENOIC ACID, 2-[METHYL[(NONAFLUOROBUTYL)SULFONYL]AMINO]ETHYL ESTER	4.19
2-Methoxymethylethoxypropanol	0.35

12.4. Mobility in soil

Mobility in soil No information available.

Mobility**12.5. Results of PBT and vPvB assessment**

PBT and vPvB assessment No information available.

12.6. Other adverse effects

Other adverse effects No information available.

13. Disposal considerations

13.1. Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.
Other information	Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Do not dispose of waste into sewer. Large amounts will affect pH and harm aquatic organisms.

14. Transport information

IMDG

14.1 UN number or ID number	UN3412
14.2 UN proper shipping name	Formic acid
14.3 Transport hazard class(es)	8
14.4 Packing group	II
14.5 Marine pollutant	Not applicable
14.6 Special Provisions	None
14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code	No information available

ADR

14.1 UN number or ID number	UN3412
14.2 UN proper shipping name	Formic acid
14.3 Transport hazard class(es)	8
14.4 Packing group	II
14.5 Environmental hazards	Not applicable
14.6 Special Provisions	None

IATA

14.1 UN number or ID number	UN3412
14.2 UN proper shipping name	Formic acid
14.3 Transport hazard class(es)	8
14.4 Packing group	II
14.5 Environmental hazards	Not applicable
14.6 Special Provisions	None

15. Regulatory information

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

Chemical name	Germany - Water Classification (VwVwS)	Germany - TA-Luft Class
Formic acid	WGK 1	
Polyvinyl pyrrolidone	WGK 1	
Toluene	WGK 2	
2-Methoxymethylethoxypropanol	WGK 1	

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorizations and/or restrictions on use:

This product does not contain substances subject to authorization (Regulation (EC) No. 1907/2006 (REACH), Annex XIV) This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Persistent Organic Pollutants

Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009 Not applicable

International Inventories

TSCA	Contact supplier for inventory compliance status
DSL/NDL	Contact supplier for inventory compliance status
EINECS/ELINCS	Contact supplier for inventory compliance status
ENCS	Contact supplier for inventory compliance status
IECSC	Contact supplier for inventory compliance status
KECL	Contact supplier for inventory compliance status
PICCS	Contact supplier for inventory compliance status
AICS	Contact supplier for inventory compliance status

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

15.2. Chemical safety assessment

Chemical Safety Report No information available

16. Other information**Key or legend to abbreviations and acronyms used in the safety data sheet****Full text of H-Statements referred to under section 3**

H314 - Causes severe skin burns and eye damage

Legend

SVHC: Substances of Very High Concern for Authorization:

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
 U.S. Environmental Protection Agency ChemView Database
 European Food Safety Authority (EFSA)
 EPA (Environmental Protection Agency)

Acute Exposure Guideline Level(s) (AEGLS)
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
RTECS (Registry of Toxic Effects of Chemical Substances)
World Health Organization

Issuing Date 04-Nov-2014

Revision date 23-Jan-2023

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet