

SAFETY DATA SHEET

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier:

CHLORIDE ANALYSER BUFFER

Product code: 001 56 208

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

Chemical for industrial and laboratory use. Not suitable for domestic use.

1.3. Details of the supplier of the safety data sheet:

Information about the manufacturer:

Sherwood Scientific Limited

Sherwood Scientific Limited, 1 The Paddocks, Cherry Hinton Road, Cambridge, CB1 8DH
United Kingdom

Tel: +44 (0)1223 243444

1.3.1. Responsible person:

Jon Copsey

E-mail:

hands@sherwood-scientific.com

1.4. Emergency telephone number:

United Kingdom: National Poisons Information Service (NPIS)

NHS 111 (England), NHS 24 (Scotland) or NHS Direct (Wales) – dial 111
In Northern Ireland contact your local GP

Healthcare Professionals: UK NPIS 0344 892 0111

European Union: *Please fill in*

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture:

Classification according to Regulation (EC) No 1272/2008 (CLP):

Skin corrosion/irritation, Hazard Category 2 – H315

Serious eye damage/eye irritation, Hazard Category 2 – H319

Hazard statements:

H315 – Causes skin irritation.

H319 – Causes serious eye irritation.

2.2. Label elements:

GHS07



WARNING

Hazard statements:

H315 – Causes skin irritation.

H319 – Causes serious eye irritation.

Precautionary statements:

- P264** – Wash thoroughly after handling.
P280 – Wear protective gloves/protective clothing/eye protection.
P302 + P352 – IF ON SKIN: Wash with plenty of water and soap.
P332 + P313 – If skin irritation occurs: Get medical advice/attention.
P362 + P364 – Take off contaminated clothing and wash it before reuse.

2.3. Other hazards:

The product has no other known specific hazards for human or environment.
 Results of PBT and vPvB assessment: Assessment not required.
 Endocrine disrupting property: Based on available data, does not contain endocrine disruptors.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances:

Not applicable.

3.2. Mixtures:

Description	CAS number	EC number / ECHA list number	REACH registration number	Conc. (%)	Classification according to Regulation (EC) No 1272/2008 (CLP)		
					Pictogram, signal word code(s)	Hazard class and category code(s)	Hazard statement code(s)
Water	7732-18-5	231-791-2	-	>80	-	not classified	-
Nitric acid (5.0M)** Index number: 007-004-00-1	7697-37-2	231-714-2	01-2119487297-23	<2	GHS06 GHS05 Danger	Acute Tox. 3 Skin Corr. 1A	H331 H314 EUH071
Poly(vinyl alcohol)* (9 % PVA in 5 % acetic acid)	9002-89-5	209-183-3	-	<10	GHS08 Warning	STOT SE 2	H371
Gelatins*	9000-70-8	232-554-6	-	<0.1	-	not classified	-
Acetic acid 80 %** Index number: 607-002-00-6	64-19-7	200-580-7	01-2119475328-30	<10	GHS02 GHS05 Danger	Flam. Liq. 3 Skin Corr. 1A Eye Dam. 1	H226 H314 H318

*: Classification specified by the manufacturer; the substance is not listed in Annex VI of the Regulation (EC) No 1272/2008.

** : Substance having occupational exposure limit value.

Poly(vinyl alcohol) (CAS: 9002-89-5):

oral: ATE >2000 mg/kg
 inhalation: ATE >5 mg/l/4 h
 dermal: ATE >2000 mg/kg

Specific concentration limits:

Nitric acid (CAS: 7697-37-2):

Ox. Liq. 2; H272: C ≥ 99 %
 Ox. Liq. 3; H272: 70 % ≤ C < 99 %

Acetic acid (CAS: 64-19-7):

Skin Corr. 1A; H314: C ≥ 90 %
 Skin Corr. 1B; H314: 25 % ≤ C < 90 %
 Skin Irrit. 2; H315: 10 % ≤ C < 25 %
 Eye Irrit. 2; H319: 10 % ≤ C < 25 %

For the full text of hazard statements, see Section 16.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures:

INGESTION:

Measures:

- If conscious give plenty of water to drink.
- Do not induce vomiting.
- If there is difficulty in breathing give oxygen if available.
- If breathing stops or shows signs of failing, apply artificial resuscitation.
- If unconscious place in the recovery position.
- OBTAIN MEDICAL ATTENTION URGENTLY.

INHALATION:

Measures:

- Remove from exposure.
- Keep warm and at rest.
- If there is difficulty in breathing give oxygen if available.
- If discomfort persists, OBTAIN MEDICAL ATTENTION.

SKIN CONTACT:

Measures:

- Wash off skin thoroughly with water.
- Remove contaminated clothing immediately and wash before re-use.
- If discomfort persists, OBTAIN MEDICAL ATTENTION.

EYE CONTACT:

Measures:

- Irrigate thoroughly with plenty of water for at least 10 minutes, holding the eye open.
- OBTAIN MEDICAL ATTENTION URGENTLY.

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

Causes skin irritation.

Causes serious eye irritation.

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

No special treatment needed; treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media:

5.1.1. Suitable extinguishing media:

Water spray, alcohol resistant foam, dry powder or carbon dioxide.

5.1.2. Unsuitable extinguishing media:

Do not use water jet.

5.2. Special hazards arising from the substance or mixture:

The formation of dangerous decomposition products greatly depends on the circumstances of the combustion. A complex mixture of airborne solid, liquid and gas substances may occur, such as carbon monoxide, carbon dioxide and unidentified compounds. The inhalation of such combustion products can have serious adverse effects on health.

5.3. Advice for firefighters:

Wear full protective clothing and self-contained breathing apparatus.

Cool the fire affected containers with water spray.

Evacuate area immediately. Keep upwind. Avoid exposure to toxic vapours and fumes.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures:

6.1.1. For non-emergency personnel:

Allow only well-trained experts wearing suitable protective clothing to abide in the field of accident.

6.1.2. For emergency responders:

Avoid breathing vapour.

Use approved personal protective equipment.

Evacuate area immediately.

Do not allow general use of area until it is safe to do so.

- 6.2. Environmental precautions:**
 Dispose of the spillage and the resulting waste according to the applicable environmental regulations. Do not allow the product and the resulting waste to enter sewers/soil/surface or ground water. Notify the respective authorities in accordance with local law in the case of environmental pollution immediately.
- 6.3. Methods and material for containment and cleaning up:**
 Major Spillage:
 Contain and absorb with inert material. Transfer absorbent to salvage container for removal. Wash area down with copious amounts of water.
 Minor Spillage:
 Wash area down with copious amounts of water.
- 6.4. Reference to other sections:**
 For further and detailed information see Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

- 7.1. Precautions for safe handling:**
 Observe conventional hygiene precautions.
 Avoid contact with skin and eyes.
 Do not breathe in vapours.
 Do not allow to contaminate clothing.
Technical measures:
 Ensure local exhaust ventilation to maintain vapour concentrations below the recommended limits.
Precautions against fire and explosion:
 No special measures required.
- 7.2. Conditions for safe storage, including any incompatibilities:**
Technical measures and storage condition:
 Store in a cool, dry and well-ventilated place.
Storage class: 12 (data given by the manufacturer).
Incompatible materials: See Section 10.5.
Packaging material: No special prescriptions.
- 7.3. Specific end use(s):**
 See intended uses in Section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters:

Occupational exposure limit values

United Kingdom (EH40/2005 Workplace Exposure Limits):

Nitric acid (CAS: 7697-37-2): Short-term: 2.6 mg/m³, 1 ppm

Acetic acid (CAS: 64-19-7): Long-term: 25 mg/m³, 10 ppm Short-term: 50 mg/m³, 20 ppm

European Union (Commission Directive (EC) No 2000/39 of 8 June 2000):

Nitric acid (CAS: 7697-37-2): Short-term: 2.6 mg/m³, 1 ppm

Acetic acid (CAS: 64-19-7): 8 hours: 25 mg/m³, 10 ppm Short-term: 50 mg/m³, 20 ppm

Observe local and national exposure limit values.

DNEL values		Oral exposure		Dermal exposure		Inhalative exposure	
		Short term (acute)	Long term (chronic)	Short term (acute)	Long term (chronic)	Short term (acute)	Long term (chronic)
Consumer	Local	no data	no data	no data	no data	no data	no data
	Systemic	no data	no data	no data	no data	no data	no data
Worker	Local	no data	no data	no data	no data	no data	no data
	Systemic	no data	no data	no data	no data	no data	no data

PNEC values		
Compartment	Value	Note(s)
Freshwater	no data	no notes
Marine water	no data	no notes
Freshwater sediment	no data	no notes
Marine water sediment	no data	no notes
Sewage Treatment Plant (STP)	no data	no notes
Intermittent release	no data	no notes
Secondary poisoning	no data	no notes
Soil	no data	no notes

8.2. Exposure controls:

In case of a hazardous material with no controlled concentration limit it is the employer's duty to keep concentration levels down to a minimum achievable by existing scientific and technological means, where the hazardous substance poses no harm to workers.

8.2.1. Appropriate engineering controls:

In pursuance of work is proper foresight needed to avoid leaking onto clothes and floors and to avoid contact with eyes and skin.

8.2.2. Individual protection measures, such as personal protective equipment:

1. **Eye/face protection:** Use chemical full-face shield (EN ISO 16321-1:2022; EN 166).
2. **Skin protection:**
 - a. **Hand protection:** Use nitrile gloves or PVC gauntlets (EN 374).
 - b. **Other:** Wear PVC oversuit.
3. **Respiratory protection:** Use L.E.V. or natural ventilation to maintain vapour concentrations below exposure limits. If not, use a well-maintained chemical cartridge organic vapour respirator, or use self-contained breathing apparatus.
4. **Thermal hazards:** No thermal hazards known.

8.2.3. Environmental exposure controls:

No specific prescription.

The requirements detailed in Section 8 assume skilled work under normal conditions and usage of the product for appropriate aims. If conditions differ from normal or work is carried out under extreme conditions, an expert's advice is necessary before deciding upon further protective measures.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties:

Parameter	Value / Test method / Remarks
1. Physical state	clear liquid
2. Colour	colourless
3. Odour, odour threshold	sharp vinegary odour
4. Melting point/freezing point	not applicable
5. Boiling point or initial boiling point and boiling range	no data*
6. Flammability	no data*
7. Lower and upper explosion limit	not applicable
8. Flash point	not applicable
9. Auto-ignition temperature	not applicable
10. Decomposition temperature	no data*
11. pH	5 (20 °C)
12. Kinematic viscosity	no data*
13. Solubility in water in other solvents	completely soluble no data*
14. Partition coefficient n-octanol/water (log value)	no data*
15. Vapour pressure	not applicable
16. Density and/or relative density	1.1160
17. Relative vapour density	no data*
18. Particle characteristics	no data*

9.2. Other information:

9.2.1. Information with regard to physical hazard classes:

Explosive properties: no.
 Oxidising properties: no.

9.2.2. Other safety characteristics:
Taste: burning taste.

*: The manufacturer did not carry out any tests on this parameter for the product or the results of the tests are not available at the time of publication of the data sheet, or the property is not applicable for the product.

SECTION 10: STABILITY AND REACTIVITY

- 10.1. Reactivity:**
No reactivity known.
- 10.2. Chemical stability:**
Stable under normal conditions.
- 10.3. Possibility of hazardous reactions:**
No hazardous reactions known.
- 10.4. Conditions to avoid:**
No conditions to avoid known.
- 10.5. Incompatible materials:**
Hydrogen peroxide, chromium trioxide and potassium permanganate. Potassium t-butoxide. Alkalis.
- 10.6. Hazardous decomposition products:**
No hazardous decomposition products known.
Burning will produce smoke, carbon monoxide and/or carbon dioxide.

SECTION 11: TOXICOLOGICAL INFORMATION

- 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008:**
Acute toxicity: Based on available data, the classification criteria are not met.
Skin corrosion/irritation: Causes skin irritation.
Serious eye damage/irritation: Causes serious eye irritation.
Respiratory or 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.
STOT-single exposure: Based on available data, the classification criteria are not met.
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.
- 11.1.1. Summaries of the information derived from the test conducted:**
No data available.
- 11.1.2. Relevant toxicological properties:**
Information about the product:
Carcinogenicity: Not considered to be a carcinogen.
Germ cell mutagenicity: Not considered to be a mutagen.
Information about the components:
Poly(vinyl alcohol) (CAS: 9002-89-5):
Acute toxicity:
oral: ATE >2000 mg/kg
inhalation: ATE >5 mg/l/4 h
dermal: ATE >2000 mg/kg
LD₅₀ (oral, rat): >20,000 mg/kg
Gelatins (CAS: 9000-70-8):
Acute toxicity:
LD₅₀ (oral, rat): >5000 mg/kg
Acetic acid (CAS: 64-19-7):
Acute toxicity:
LD₅₀ (oral, rat): >3310 mg/kg
LC₅₀ (inhalation, vapours, mouse): 2819 mg/l/4 h
Skin corrosion/irritation:
Rabbit: causes burns (4 hours) (OECD 404)
Serious eye damage/irritation:
Rabbit: causes burns (4 hours) (OECD 405)
Germ cell mutagenicity:
Test Type: Ames test

- Test system: Salmonella typhimurium
Result: negative
- Test Type: Mutagenicity (mammal cell test): chromosome aberration.
Test system: Chinese hamster ovary cells
Result: negative
Method: Mutagenicity (micronucleus test)
Species: Rat - male and female - Bone marrow
Result: negative
- 11.1.3. Information on likely routes of exposure:**
Ingestion, inhalation, skin contact, eye contact.
- 11.1.4. Symptoms related to the physical, chemical and toxicological characteristics:**
Eyes: Both the vapour and liquid will, be irritating to the eyes.
Skin: Both the vapour and liquid will, be irritating to the skin.
Ingestion: Causes severe corrosion of the mouth, throat and gastro-intestinal tract.
Inhalation: High concentrations of vapour will produce severe irritation of the eyes, nose, throat and respiratory tract.
- 11.1.5. Delayed and immediate effects as well as chronic effects from short and long-term exposure:**
Causes skin irritation.
Causes serious eye irritation.
- 11.1.6. Interactive effects:**
No data available.
- 11.1.7. Absence of specific data:**
No information.
- 11.2. Information on other hazards:**
Endocrine disrupting properties:
Endocrine disrupting property: Based on available data, does not contain endocrine disruptors.
Other information:
No data available.

SECTION 12: ECOLOGICAL INFORMATION

- 12.1. Toxicity:**
The mixture is not classified as hazardous for the environment.
Information about the components:
Acetic acid (CAS: 64-19-7):
LC₅₀ (Oncorhynchus mykiss): >1000 mg/l/96 h (OECD 203)
EC₅₀ (Daphnia magna): >1000 mg/l/48 h (OECD 202)
EC₅₀ (Skeletonema costatum): >1000 mg/l/72 h (ISO 10253)
EC₅ (Pseudomonas putida): 2850 mg/l/16 h
EC₅₀ (Photobacterium phosphoreum): 11 mg/l/15 min (IUCLID)
- 12.2. Persistence and degradability:**
No data available.
- 12.3. Bioaccumulative potential:**
No data available.
- 12.4. Mobility in soil:**
No data available.
- 12.5. Results of PBT and vPvB assessment:**
Assessment not required.
- 12.6. Endocrine disrupting properties:**
Endocrine disrupting property: Based on available data, does not contain endocrine disruptors.
- 12.7. Other adverse effects:**
Water hazard class (WGK, German regulation, self-classification): 1 – slightly hazardous for water.

SECTION 13: DISPOSAL CONSIDERATIONS

- 13.1. Waste treatment methods:**
Disposal according to the local regulations.
- 13.1.1. Information regarding the disposal of the product:**
Dispose of in accordance with applicable regulations.
Dilute in a large excess of water and carefully neutralise with soda ash, then wash to drain with copious amounts of water.

List of Waste Code:

No waste disposal key according to the List of Waste Code (LoW code) can be determined for this product, as only the purpose of application defined by the user enables an allocation. The LoW code number has to be determined after a discussion with a waste disposal specialist.

13.1.2. Information regarding the disposal of the packaging:

Dispose of in accordance with applicable regulations.

Contaminated packaging: Wash out containers with water. Use a licensed waste disposer.

13.1.3. Physical/chemical properties that may affect waste treatment options shall be specified:

No data available.

13.1.4. Sewage disposal:

No data available.

13.1.5. Special precautions for any recommended waste treatment:

No data available.

SECTION 14: TRANSPORT INFORMATION

ADR/RID; ADN; IMDG; IATA:

Not subject to the conventions of carriage of dangerous goods.

14.1. UN number or ID number:

No UN or ID number.

14.2. UN proper shipping name:

No proper shipping name.

14.3. Transport hazard class(es):

No transport hazard classes.

14.4. Packing group:

No packing group.

14.5. Environmental hazards:

See Section 12.

14.6. Special precautions for user:

No relevant information available.

14.7. Maritime transport in bulk according to IMO instruments:

Not applicable.

SECTION 15: REGULATORY INFORMATION

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

REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive (EC) No 1999/45 and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive (EEC) No 76/769 and Commission Directives (EEC) No 91/155, (EEC) No 93/67, (EC) No 93/105 and (EC) No 2000/21

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives (EEC) No 67/548 and (EC) No 1999/45, and amending Regulation (EC) No 1907/2006

COMMISSION REGULATION (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

The mixture contains a substance that is subject to **Regulation (EU) 2019/1148** on the marketing and use of explosives precursors: ANNEX I – RESTRICTED EXPLOSIVES PRECURSORS

List of substances which are not to be made available to, or introduced, possessed or used by, members of the general public, whether on their own or in mixtures or substances that include those substances, unless the concentration is equal to or lower than the limit values set out in column 2, and for which suspicious transactions and significant disappearances and thefts are to be reported within 24 hours:

Name of the substance and Chemical Abstracts Service Registry number (CAS RN): **Nitric acid** (CAS: 7697-37-2):

Limit value: 3 % w/w

Upper limit value for the purpose of licensing under Article 5(3): 10 % w/w

15.2. **Chemical safety assessment:** Assessment not required.

SECTION 16: OTHER INFORMATION

Information regarding the revision of the safety data sheet:

The safety data sheet has been revised according to Regulation (EU) 2020/878 (Section 1-16).
The composition of the mixture were modified compared to the previous version.

This safety data sheet supersedes all previous versions according to Annex II of Regulation (EC) No 1907/2006.

Literature references / data sources:

Previous version of the safety data sheet (30. 11. 2023, version 7)
Information provided by the manufacturer (composition, safety data sheets of the ingredients).

Methods used for the classification according to Regulation (EC) No 1272/2008:

Classification	Method
Skin corrosion/irritation, Hazard Category 2 – H315	Based on calculation method
Serious eye damage/eye irritation, Hazard Category 2 – H319	Based on calculation method

Relevant hazard statements (code and full text) of Sections 2 and 3:

H226 – Flammable liquid and vapour.

H272 – May intensify fire; oxidiser.

H314 – Causes severe skin burns and eye damage.

H315 – Causes skin irritation.

H318 – Causes serious eye damage.

H319 – Causes serious eye irritation.

H330 – Fatal if inhaled.

H371 – May cause damage to organs *<or state all organs affected, if known>* *<state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard>*.

Training advice: No data available.

Full text of the abbreviations in the safety data sheet:

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.

ADR: Agreement concerning the International Carriage of Dangerous Goods by Road.

ATE: Acute Toxicity Estimate.

AOX: Adsorbable organic halides.

BCF: Bioconcentration factor.

BOD: Biological Oxygen Demand.

CAS number: Chemical Abstract Service number.

CLP: Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures.

CMR effects: Carcinogenic, mutagenic, reprotoxic effects.

COD: Chemical Oxygen Demand.

CSA: Chemical Safety Assessment.

CSR: Chemical Safety Report.

DNEL: Derived-No-Effect-Level.

ECHA: European Chemical Agency.

EC: European Community.

EC number: EINECS and ELINCS numbers (see also EINECS and ELINCS).

EEC: European Economic Community.

EEA: European Economic Area (EU + Iceland, Liechtenstein and Norway).

EINECS: European Inventory of Existing Commercial Chemical Substances.

ELINCS: European List of Notified Chemical Substances.

EN: European Norm.

EU: European Union.

EuPCS: European Product Categorisation System.

EWC: European Waste Catalogue (replaced by LoW – see below).

GHS: Globally Harmonized System of Classification and Labelling of Chemicals.

IATA: International Air Transport Association.

ICAO-TI: Technical Instructions for the Safe Transport of Dangerous Goods by Air.

IMDG: International Maritime Dangerous Goods.

IMO: International Maritime Organization.
IMSBC: International Maritime Solid Bulk Cargoes.
IUCLID: International Uniform Chemical Information Database.
IUPAC: International Union of Pure and Applied Chemistry.
Kow: n-Octanol - Water Partition Coefficient.
LC₅₀: Lethal concentration resulting in 50 % mortality.
LD₅₀: Lethal dose resulting in 50 % mortality (median lethal dose).
LoW: List of Waste.
LOEC: Lowest Observed Effect Concentration.
LOEL: Lowest Observed Effect Level.
NOEC: No Observed Effect Concentration.
NOEL: No Observed Effect Level.
NOAEC: No Observed Adverse Effect Concentration.
NOAEL: No Observed Adverse Effect Level.
OECD: Organization for Economic Cooperation and Development.
OSHA: Occupational Safety and Health Administration.
PBT: Persistent, Bioaccumulative and Toxic.
PNEC: Predicted No Effect Concentration.
QSAR: Quantitative Structure Activity Relationship.
REACH: Regulation 1907/2006/EC concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals.
RID: Regulations Concerning the International Transport of Dangerous Goods by Rail.
SCBA: Self Contained Breathing Apparatus.
SDS: Safety Data Sheet.
STOT: Specific Target Organ Toxicity.
SVHC: Substances of Very High Concern.
UN: United Nations.
UVCB: Chemical Substances of Unknown or Variable Composition, Complex Reaction Products or of Biological Materials.
VOC: Volatile Organic Compound.
vPvB: very Persistent and very Bioaccumulative.

This safety data sheet had been prepared on the basis of information provided by the manufacturer/supplier and conform to the relevant regulations.

The information, data and recommendations contained herein are provided in good faith, obtained from reliable sources and believed to be true and accurate as of the date issued; however, no representation is made as to the comprehensiveness of the information.

The SDS shall be used only as a guide for handling the product; in the course of handling and using the product other considerations may arise or be required.

Users are cautioned to determine the appropriateness and applicability of the above information to their particular circumstances and purposes and assume all risk associated with the use of this product.

It is the responsibility of the user to fully comply with local, national and international regulations concerning the use of this product.

Safety data sheet was prepared by:
MSDS-Europe
International branch of ToxInfo Kft.

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the explanation of the safety
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