SAFETY DATA SHEET

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

1.1. **Product identifier:**
HEXYL CHLOROFORMATE

IUPAC name: Hexyl chloroformate
CAS number: 6092-54-2
EC number: 228-036-4
REACH registration number: 01-2120099956-32-0002; transported isolated intermediate

1.2. **Relevant identified uses of the substance or mixture and uses advised against:**
Organic synthesis intermediate for industrial use.
Transported, isolated intermediate.

Process category (PROC):
PROC 3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment conditions
PROC 8a: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC 15: Use as laboratory reagent

1.3. **Details of the supplier of the safety data sheet:**
Framochem French-Hungarian Fine Chemicals Ltd.
3700 Kazincbarcika, Szerviz út 5, Pf. 504
Tel: +36 (48) 311-991
Fax: +36 (48) 512-162

1.3.1. Responsible person: -
E-mail: info@framochem.hu

1.4. **Emergency telephone number:** **Public Toxicological Health Service (ETTSZ)**
1097 Budapest, Albert Flórián út 2-6.
Tel.: +36 80 201 199 (0-24, free of charge – only from Hungary)
Tel.: +36 1 476 6464 (0-24, normal charge – also from foreign countries)

SECTION 2: HAZARDS IDENTIFICATION

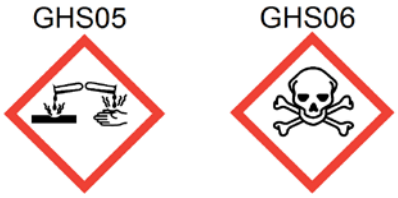
2.1. **Classification of the substance or mixture:**

Classification according to Regulation (EC) No 1272/2008 (CLP):
Skin corrosion/irritation, Hazard Category 2 – H315
Serious eye damage/eye irritation, Hazard Category 1 – H318
Acute toxicity (inhalation), Hazard Category 2 – H330
Hazardous to the aquatic environment – Chronic Hazard, Category 3 – H412

Hazard statements:
H315 – Causes skin irritation.
H318 – Causes serious eye damage.
H330 – Fatal if inhaled.
H412 – Harmful to aquatic life with long lasting effects.

2.2. **Label elements:**

IUPAC name: Hexyl chloroformate
CAS number: 6092-54-2
EC number: 228-036-4



DANGER

Hazard statements:
H315 – Causes skin irritation.
H318 – Causes serious eye damage.
H330 – Fatal if inhaled.
H412 – Harmful to aquatic life with long lasting effects.

Precautionary statements:
P202 – Do not handle until all safety precautions have been read and understood.
P260 – Do not breathe vapours/spray.
P273 – Avoid release to the environment.
P280 – Wear protective gloves/protective clothing/eye protection/face protection.
P284 – [In case of inadequate ventilation] wear respiratory protection.
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 a doctor.
P405 – Store locked up.
P501 – Dispose of contents/container to hazardous waste collection point.

2.3. **Other hazards:**
No other known specific hazards for human or environment.
Information concerning specific hazards for human and environment: see Sections 11 and 12.
The substance does not meet the criteria for PBT or vPvB substances.
Endocrine disrupting property: Not an endocrine disruptor.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. **Substance:**

IUPAC name: Hexyl chloroformate; Chloro(hexyloxy)methanone
Synonym: Chloroformic acid n-hexyl ester
CAS number: 6092-54-2
EC number: 228-036-4
Formula: $C_7H_{13}ClO_2$
Molar mass: 164.63 g/mol
Purity: >99.6 %

Other hazardous contaminant / Concentration: The product contains phosgene and hydrochloric acid in traces.
Other hazardous additives / Concentration: The presence of hazardous additive is not known.

SECTION 4: FIRST AID MEASURES

4.1. **Description of first aid measures:**

General information: Immediately remove contaminated clothing. If danger of loss of consciousness, place patient in recovery position and transport accordingly. Apply artificial respiration if necessary. First aid personnel should pay attention to their own safety.

INGESTION:

Measures:

- Rinse mouth immediately and then drink plenty of water, seek medical attention.

INHALATION:

Measures:

- Keep patient calm, remove to fresh air, seek medical attention.
- Immediately inhale corticosteroid dose aerosol.

SKIN CONTACT:

Measures:

- Immediately wash thoroughly with soap and water, seek medical attention.

EYE CONTACT:

Measures:

- Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

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

Causes skin irritation.
Causes serious eye damage.
Fatal if inhaled.

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

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote. Pulmonary oedema prophylaxis. Medical monitoring for at least 24 hours.

SECTION 5: FIREFIGHTING MEASURES

5.1. **Extinguishing media:**

5.1.1. **Suitable extinguishing media:**

Dry powder, carbon dioxide, foam.

5.1.2. **Unsuitable extinguishing media:**

Water.

5.2. **Special hazards arising from the substance or mixture:**

Reacts violently with water.
In case of fire, hydrogen chloride may be formed. The inhalation of the combustion product may have serious adverse effects on health.

5.3. **Advice for firefighters:**

Wear full protective clothing and self-contained breathing apparatus.
Fire debris must be disposed of in accordance with official regulations.

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 the accident.

6.1.2. **For emergency responders:**

Breathing protection required.
Avoid contact with the skin, eyes and clothing.
Evacuate unauthorized persons from the place of the accident.
Remove all ignition sources from the affected area.
Close the designated area.
Ensure adequate ventilation.

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:**

Pick up spilled material with suitable appliance and dispose of it.

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.
Protect against moisture.
Avoid contact with skin, eyes and clothing.
Technical measures:
Ensure thorough ventilation of stores and work areas.
Precautions against fire and explosion:
Keep away from sources of ignition - No smoking.

7.2. **Conditions for safe storage, including any incompatibilities:**
Technical measures and storage condition:
Segregate from alkalis and alkalizing substances.
Keep container tightly closed in a cool, well-ventilated place.
Keep under dry nitrogen.
Avoid extreme heat.
Storage temperature: < 25 °C
Storage duration: 12 months.
Protect against moisture.
Keep in appropriately labelled container.
The place of storage has to be properly ventilated and cleanable.
Store in a dry place.
Follow all instructions on the label.
Store away from heat.
Incompatible materials: See Section 10.5
Packaging material: glass, high density polyethylene (HDPE), lead coated, enamelled.

7.3. **Specific end use(s):**
No specific instructions available.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. **Control parameters:**

Occupational exposure limit values (Commission Directive (EC) No 2000/39 of 8 June 2000):
The substance is not regulated with exposure limit value.

Phosgene (CAS: 75-44-5):
Eight hours: 0.08 mg/m³; 0.02 ppm; Short-term: 0.4 mg/m³; 0.1 ppm
Hydrogen chloride (CAS: 7647-01-0):
Eight hours: 8 mg/m³; 5 ppm; Short-term: 15 mg/m³; 10 ppm

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:
Freshwater: 15 µg/L
Freshwater - Intermittent release: 150 µg/L
Marine water: 1.5 µg/l
Sewage Treatment Plant (STP): 14 mg/L
Freshwater sediment: 119 µg/kg sediment dw
Marine water sediment: 11.9 µg/kg sediment dw
Soil: 14.9 µg/kg soil dw

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 spilling onto clothes and floors and to avoid contact with eyes and skin.
Do not inhale vapours.
Ensure adequate ventilation, especially in closed areas.
Do not eat, drink or smoke during the processing.
Wash thoroughly after the work hours.
In the vicinity of the workplace safety shower and eye wash fountain has to be installed.

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

Avoid contact with the skin, eyes and clothing.
Do not breathe vapour/spray.

1. **Eye/face protection:** Use appropriate, tightly fitting protective glasses (EN ISO 16321-1:2022; EN 166).
2. **Skin protection:**
    a. **Hand protection:** Use appropriate, chemical resistant protective gloves (EN 374).
    Suitable materials short-term contact and/or splashes (recommended: At least protective index 2, corresponding > 30 minutes of permeation time according to EN 374):
    butyl rubber (butyl) - 0.7 mm thickness
    Manufacturer's directions for use should be observed because of great diversity of types.
    Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.
    b. **Other:** Use appropriate protective clothes. Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).
3. **Respiratory protection:** Use appropriate respiratory protective device against organic vapours (EN 136, 141). Breathing protection if gases/vapours are formed. Gas filter for gases/vapours of organic compounds (boiling point > 65 °C, e. g. EN 14387 Type A) Suitable respiratory protection for higher concentrations or long-term effect: Self-contained breathing apparatus.
4. **Thermal hazards:** No thermal hazards known.

8.2.3. **Environmental exposure controls:**

No special measures required.

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	organic liquid
2.	Colour	clear, colourless
3.	Odour, odour threshold	characteristic
4.	Melting point/freezing point	no melting temperature was found between -100 °C and 50 °C; a glass transition might exist below -100 °C
5.	Boiling point or initial boiling point and boiling range	60 - 61 °C (9.333 hPa)
6.	Flammability	non-flammable
7.	Lower and upper explosion limit	no data*
8.	Flash point	69.5 °C (1013 hPa)
9.	Auto-ignition temperature	250 °C (101.325 kPa)
10.	Decomposition temperature	no data*
11.	pH	not applicable
12.	Kinematic viscosity	no data*
13.	Solubility in water in other solvents	reacts with water no data*
14.	Partition coefficient n-octanol/water (log value)	log Pow = 2.591 (25 °C)
15.	Vapour pressure	71 - 279 Pa (20-30 °C)
16.	Density and/or relative density	relative density: 1.007 density: 1.007 g/cm³ (20 °C)
17.	Relative vapour density	5.6 (air = 1)
18.	Particle characteristics	no data*

9.2. Other information:

9.2.1. Information with regard to physical hazard classes:

Oxidizing properties: Non-oxidizing.

9.2.2. Other safety characteristics:

Dynamic viscosity: 0.98 – 1.34 mPa.s (20 °C)

*: 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:

Stable at room temperature.
See also section 10.3.
Corrosion to metals: Corrosive effect on metals.
Reaction with water.

10.2. Chemical stability:

At normal temperature and general conditions of work stabile. Decomposes in contact with heat, moist air or water.
The product is stable if stored and handled as prescribed/indicated.

10.3. Possibility of hazardous reactions:

Reacts with alkalis, water, acids, amines and alcohols.
Reacts with water and basic components to generate heat. Reacts with amines. Reacts with alcohols, amines, aqueous acids and alkalis. The formation of gaseous decomposition products builds up pressure in tightly closed containers if the product is greatly overheated. Evolution of corrosive gases/vapours. Reacts with activated carbon. Reacts with alkalis and metals. Reacts with water and moisture, with formation of hydrogen chloride. Partly very violent reactions with bases and numerous organic classes of substances such as alcohols and amines. Impurities promote decomposition. Energy is released when reacting with e.g. acids, alkaline reacting substances, amines or catalysts. ppm traces of heavy metals reduce the onset temperature and lead to instability and exothermic product release with gas formation.

10.4. Conditions to avoid:

Avoid contact with water.
Protect from heat.
Temperature: > 40 °C.

10.5. Incompatible materials:

Alkalis, water, acids, amines and alcohols.

Water, alkaline reactive substances, alcohols, bases, amines, iron compounds, heavy metal salts.

10.6. **Hazardous decomposition products:**
In case of thermal decomposition carbon monoxide, hydrogen chloride gas and carbon dioxide are formed.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. **Information on hazard classes as defined in Regulation (EC) No 1272/2008:**
Acute toxicity: Fatal if inhaled.
Skin corrosion/irritation: Causes skin irritation.
Serious eye damage/irritation: Causes serious eye damage.
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:**
Acute toxicity:
LC50 (inhalative, rat): 1.17 mg/l air/4 h
Genetic toxicity:
In vitro:
No adverse effect observed (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:**
In case of inhalation, ingestion or absorption through skin may be toxic, may cause fatal poisoning! The product extremely destructs the tissues, the mucous membranes, the upper respiratory tract, the eyes and the skin.
Ingestion: Mucous membrane irritation and burning is likely.
Inhalation: The inhalation of the vapours may cause mucous membrane irritation, and it may cause convulsions and inflammation in the larynx and in the bronchia.
May cause burning in the respiratory tract. Pneumonia, pulmonary oedema may occur.
Symptoms of the exposition: burning feeling, coughing, laboured breath, inflammation of the larynx, short breath, headache, nausea, vomiting.
Skin contact: Causes skin irritation.
Eye contact: It may cause serious eye damage, the injury of the cornea, the deterioration of the eyesight, blindness.

11.1.5. **Delayed and immediate effects as well as chronic effects from short and long-term exposure:**
Causes skin irritation.
Causes serious eye damage.
Fatal if inhaled.

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: Not an endocrine disruptor.
Other information:
No data available.

SECTION 12: ECOLOGICAL INFORMATION

12.1. **Toxicity:**
Harmful to aquatic life with long lasting effects.
Dissipation half life (DT50):
39.63 – 52.1 h
LC50 (fish): 4.92 – 97.2 mg/l/4 days
EC50 (aquatic invertebrates): 492 µg/l/48h
EC50 (aquatic invertebrates): 492 - 201 000 µg/l/24h
EC50 (algae and cyanobacteria): 492 - 79 700 µg/l/72h
NOEC (algae and cyanobacteria): 97 - 11 300 µg/l/72h
EC10 (algae and cyanobacteria): 19.8 mg/l/72h
EC50 (microorganisms): 340 mg/l/3h
EC10 (microorganisms): 140 mg/l/3h

12.2. **Persistence and degradability:**
Biodegradation: 44 % / 28 days

12.3. **Bioaccumulative potential:**
Bioaccumulation factor:
BCF: 10.1 l/kg (log BCF: 1.01)
BAF: 9.35 l/kg (log BAF: 0.97)

12.4. **Mobility in soil:**
Adsorption coefficient:
Koc: 43.3 (25 °C)
log Koc: 1.637 (25 °C)
Henry's Law constant:
1.73 – 1.78 Pa m³/mol (25 °C)
Distribution:
Air (%): 42.2
Water (%): 56.8
Soil (%): 0.481
Sediment (%): 0.487
Susp. sediment (%): 0
Biota (%): 0
Aerosol (%): 0

12.5. **Results of PBT and vPvB assessment:**
The substance does not meet the criteria for PBT or vPvB substances.

12.6. **Endocrine disrupting properties:**
Endocrine disrupting property: Not an endocrine disruptor.

12.7. **Other adverse effects:**
No data available.

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:**
Incinerate in suitable incineration plant, observing local authority regulations.
The product can be incinerated in a chemical incinerator equipped with an afterburner and scrubber.
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:**
Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.
The packaging material contaminated with hazardous waste should be disposed according to the local regulations.
The emptied packaging material should be collected and disposed of according to the pertinent regulation.

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

14.1. UN number or ID number:
ADR/RID; IMDG; IATA:
UN 3277

14.2. UN proper shipping name:
ADR/RID: CHLOROFORMATES, TOXIC, CORROSIVE, N.O.S. (Hexyl-chloroformate)
IMDG: CHLOROFORMATES, TOXIC, CORROSIVE, N.O.S. (Hexyl-chloroformate)
IATA: CHLOROFORMATES, TOXIC, CORROSIVE, N.O.S. (Hexyl-chloroformate)

14.3. Transport hazard class(es):
ADR/RID: 6.1 (8)
IMDG: 6.1 (8)
IATA: 6.1 (8)

14.4. Packing group:
ADR/RID: II
IMDG: II
IATA: II

14.5. Environmental hazards:
ADR/RID: no
IMDG: no
IATA: no

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)

15.2. Chemical safety assessment: No information.

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 hazard classification of the substance did not change 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 (13. 09. 2018, version CLP_E).
REACH registration data.

Relevant hazard statements (code and full text) of Sections 2 and 3:
H315 – Causes skin irritation.
H318 – Causes serious eye damage.
H330 – Fatal if inhaled.
H412 – Harmful to aquatic life with long lasting effects.

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.
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 and 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.

Professional help regarding the explanation of the safety data sheet:
+36 70 335 8480; info@msds-europe.com
www.msds-europe.com