Safety Data Sheet

According to Annex II to REACH - Regulation 2020/878 and to Annex II to UK REACH

1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Item code	41102322
Product name	Bath thermal fluid

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

Intended use
Pre-mixed thermal fluid for cryostats and thermostatic baths

1.3 Details of the supplier of the safety data sheet

Business name	GIORGIO BORMAC srl
Full address	via della meccanica, 25
Town	Carpi
Postal code	41012
Province	MO
Country	Italy
Phone number	+39 059 653274
e-mail address of the competent person responsible for the Safety Data Sheet	sds@giorgiobormac.com

1.4 Emergency telephone number

For urgent inquiries refer to	+1 352-323-3500

2 Hazards identification

2.1 Classification of the substance or mixture

The product is classified as hazardous pursuant to the provisions set forth in (EC) Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of (EU) Regulation 2020/878.
Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

Hazard classification		
Acute toxicity, category 4	H302	Harmful if swallowed.
Specific target organ toxicity - repeated exposure, category 2	H373	May cause damage to organs through prolonged or repeated exposure.

2.2 Label elements

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms



Signal word
Warning

Hazard statements	
H302	Harmful if swallowed.
H373	May cause damage to organs through prolonged or repeated exposure.

Precautionary statements	
P314	Get medical advice / attention if you feel unwell.
P260	Do not breathe spray, vapours.
P264	Wash exposed body parts thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P330	Rinse mouth.
P103	Read label before use.

Contains
ETHANEDIOL

2.3 Other hazards

On the basis of available data, the product does not contain any PBT or vPvB in percentage ≥ than 0,1%.
The product does not contain substances with endocrine disrupting properties in concentration ≥ 0.1%.

3 Composition/information on ingredients

3.2 Mixtures

ETHANEDIOL

Concentration	50 ≤ x < 55 %
CAS number	107-21-1
EC number	203-473-3
INDEX number	603-027-00-1
Registration Number	01-2119456816-28
Hazard classification	▪ Acute Tox. 4; H302 ▪ STOT RE 2; H373
ATE (Oral)	500 mg/kg
Substance with a community workplace exposure limit.	

The full wording of hazard (H) phrases is given in section 16 of the sheet.

4 First aid measures

4.1 Description of first aid measures

In case of doubt or in the presence of symptoms contact a doctor and show him this document.
In case of more severe symptoms, ask for immediate medical aid.
EYES: Remove, if present, contact lenses if the situation allows you to do so easily. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. Get medical advice/attention.
SKIN: Take off contaminated clothing. Wash immediately and thoroughly with running water (and soap if possible). Get medical advice. Avoid further contact with contaminated clothing.
INGESTION: Do not induce vomiting unless explicitly authorised by a doctor. Do not give anything by mouth to an unconscious person. Get medical advice/attention.
INHALATION: Remove victim to fresh air, away from the accident scene. Get medical advice/attention.

Rescuers protection

It is good practice for rescuers lending support to a person who has been exposed to a chemical substance or to a mixture to wear personal

protective equipment. The nature of such protection depends on the hazard level of the substance or mixture, on the type of exposure and on the extent of the contamination. In the absence of other more specific indications, use of disposable gloves in the event of possible contact with body fluids is recommended. For the type of PPE suitable for the characteristics of the substance or mixture, see section 8.

ETHANEDIOL

In case of skin contact: Take off contaminated clothing immediately.
Wash immediately with plenty of running water and possibly soap the areas of the body that have come into contact with the product, even if only suspected.
Wash your body completely (shower or bath).
Immediately remove contaminated clothing and dispose of it safely.
In case of contact with skin, wash immediately with plenty of water and soap.
In case of contact with eyes: wash immediately and abundantly with water
consult an ophthalmologist.
In case of ingestion: Do not give anything to eat or drink.
In case of inhalation: Move the victim to fresh air and keep him warm and at rest.

4.2 Most important symptoms and effects, both acute and delayed

Specific information on symptoms and effects caused by the product are unknown.
DELAYED EFFECTS: Poisoning symptoms can appear even hours after exposure: it is therefore appropriate to keep the injured person under observation in the hours following the accident.

ETHANEDIOL

Delayed serious effects may occur following exposure
Anion deficiency in metabolic acidosis
Central nervous system depression
Kidney damage
Possible late-stage cranial nerve involvement
Breathing problems
Pulmonary edema

4.3 Indication of any immediate medical attention and special treatment needed

Get medical advice / attention if you feel unwell.

Means to have available in the workplace for specific and immediate treatment

Running water for skin and eye wash.

ETHANEDIOL

In the event of an accident or feeling unwell, consult a doctor immediately (show the instructions for use or safety data sheet if possible).
Treatment: Symptomatic treatment.
Submit to medical supervision for at least 48 hours.
In case of severe poisoning, mechanical ventilation support with positive respiratory pressure may be required. Maintain an adequate level of ventilation and oxygen supply to the patient.
If a quantity of ethylene glycol of approximately 60 - 100 ml has been ingested, the rapid administration of ethanol can counteract the toxic effects (metabolic acidosis, kidney damage).
Consider hemodialysis or peritoneal dialysis and administration of thiamine 100 mg and pyridoxine 50 mg intravenously every 6 hours.
If ethanol is used, a therapeutically effective blood concentration in the range of 100-150 mg/dL can be achieved with a rapid loading dose followed by continuous intravenous infusion.
Consult the literature for details. 4-methyl pyrazole: effective blocker of alcoholic dehydrogenase, available as Fomepizole (Antizol(R)) should be used in the treatment of intoxications from mono/di/tri ethylene glycol, methanol, ethylene glycol butyl ether
Fomepizole protocol (Brent J. et al., New EngJ Med, Feb 8 2001 244:6, p 424-9): loading dose 15 mg/kg intravenously, followed by maintenance dose of 10 mg/kg every 12 hours.
Continue administration of Fomepizole until mono, di, or triethylene glycol methanol serum is no longer present.

5 Firefighting measures

5.1 Extinguishing media

SUITABLE EXTINGUISHING EQUIPMENT
The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.
UNSUITABLE EXTINGUISHING EQUIPMENT
None in particular.

5.2 Special hazards arising from the substance or mixture

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE
Do not breathe combustion products.

5.3 Advice for firefighters

GENERAL INFORMATION
Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.
SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS
Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Block the leakage if there is no hazard.
Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

6.2 Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

6.3 Methods and material for containment and cleaning up

Collect the leaked product into a suitable container. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material.
Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

6.4 Reference to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

7 Handling and storage

7.1 Precautions for safe handling

Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

7.2 Conditions for safe storage, including any incompatibilities

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Keep containers away from any incompatible materials, see section 10 for details.

Storage class TRGS 510 (Germany)
None

7.3 Specific end use(s)

Information not available.

8 Exposure controls/personal protection

8.1 Control parameters

Regulatory references	
ACGIH	ACGIH 2023
European Union-OEL	Directive (EU) 2022/431; Directive (EU) 2019/1831; Directive (EU) 2019/130; Directive (EU) 2019/983; Directive (EU) 2017/2398; Directive (EU) 2017/164; Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC; Directive 98/24/EC; Directive 91/322/EEC.
Ireland-OELV	2020 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations (2001-2015) and the Safety, Health and Welfare at Work (Carcinogens) Regulations (2001-2019)
Malta-TLV	PROTECTION OF THE HEALTH AND SAFETY OF WORKERS FROM THE RISKS RELATED TO CHEMICAL AGENTS AT WORK REGULATIONS (S.L.424.24). PROTECTION OF WORKERS FROM THE RISKS RELATED TO EXPOSURE TO CARCINOGENS OR MUTAGENS AT WORK REGULATIONS (S.L.424.22)

ETHANEDIOL

	TWA		STEL		CEILING		Remarks	
	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm		
ACGIH			10				Inhalation	
ACGIH		25		50			--	
European Union-OEL	52	20	104	40			Skin	
Ireland-OELV	10						Skin	Particulates
Malta-TLV	52	20	104	40			Skin	

Predicted no-effect concentration - PNEC	
Normal value of STP microorganisms	199.5 mg/l
Normal value in fresh water	10 mg/l
Normal value in marine water	1 mg/l
Normal value for marine water sediment	37 mg/kg/d
Normal value for the terrestrial compartment	1.53 mg/kg
Normal value for water, intermittent release	10 mg/l

Health - Derived no-effect level - DNEL / DMEL	Local effect	Systemic effect
Consumers, short-term, inhalation	7 mg/m³	
Consumers, long-term, dermal	53 mg/kg	
Workers, long-term, dermal		106 mg/kg bw/d
Workers, long-term, inhalation	35 mg/m³	

8.2 Exposure controls

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration.

When choosing personal protective equipment, ask your chemical substance supplier for advice.
Personal protective equipment must be CE marked, showing that it complies with applicable standards.
When choosing risk management measures and operating conditions, consult the exposure scenarios attached.
Exposure levels must be kept as low as possible to avoid significant build-up in the organism. Manage personal protective equipment so as to guarantee maximum protection (e.g. reduction in replacement times).

HAND PROTECTION
Protect hands with category III work gloves (see standard EN 374).
The following should be considered when choosing work glove material: compatibility, degradation, failure time and permeability.
The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves' wear time depends on the duration and type of use.

SKIN PROTECTION
Wear category II professional long-sleeved overalls and safety footwear (see Regulation 2016/425 and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

EYE PROTECTION
Wear airtight protective goggles (see standard EN 166).
In the presence of risks of exposure to splashes or squirts during work, adequate mouth, nose and eye protection should be used to prevent accidental absorption.

RESPIRATORY PROTECTION
If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, use a mask with a type A filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (see standard EN 14387). In the presence of gases or vapours of various kinds and/or gases or vapours containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required.
Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. The protection provided by masks is in any case limited.
If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus (in compliance with standard EN 137) or external air-intake breathing apparatus (in compliance with standard EN 138). For a correct choice of respiratory protection device, see standard EN 529.

ENVIRONMENTAL EXPOSURE CONTROLS
The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	liquid	
Colour	colourless	
Odour	odourless	
Odour threshold	Not relevant	
Melting point / freezing point	Not available	
Initial boiling point	Not available	
Flammability	Not available	
Lower explosive limit	Not available	
Upper explosive limit	Not available	
Flash point	Not available	
Auto-ignition temperature	Not available	
Decomposition temperature	Not available	
pH	$7 \leq x \leq 9$	
Kinematic viscosity (40 °C)	Not available	
Solubility	soluble in water	
Partition coefficient: n-octanol/water	Not available	
Vapour pressure	Not available	
Density and/or relative density	1.027 kg/l	

Relative vapour density	Not available	

Particle characteristics

Information not available.

9.2 Other information

9.2.1 Information with regard to physical hazards

Information not available.

9.2.2 Other safety characteristics

Information not available.

10 Stability and reactivity

10.1 Reactivity

There are no particular risks of reaction with other substances in normal conditions of use.

ETHANEDIOL

May react with: oxidising substances

10.2 Chemical stability

The product is stable in normal conditions of use and storage.

10.3 Possibility of hazardous reactions

No hazardous reactions are foreseeable in normal conditions of use and storage.

ETHANEDIOL

May react with: oxidising substances

10.4 Conditions to avoid

None in particular. However the usual precautions used for chemical products should be respected.

ETHANEDIOL

Avoid exposure to: high temperatures

10.5 Incompatible materials

Information not available.

10.6 Hazardous decomposition products

ETHANEDIOL

May develop: carbon oxides

11 Toxicological information

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.
It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

11.1.1 Metabolism, toxicokinetics, mechanism of action and other information

Information not available.

11.1.2 Information on likely routes of exposure

ETHANEDIOL

WORKERS: inhalation; contact with the skin.
POPULATION: inhalation of ambient air; contact with the skin of products containing the substance.

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

ETHANEDIOL

Ingestion initially stimulates the central nervous system; later replaced by a phase of depression. There may be kidney damage, with anuria and uremia. Over-exposure symptoms are: vomiting, drowsiness, difficulty in breathing, convulsions. The lethal dose for humans is approx. 1.4 ml/kg.

11.1.4 Interactive effects

Information not available.

11.1.5 ACUTE TOXICITY

ATE (Inhalation) of the mixture	Not classified (no significant component)
ATE (Oral) of the mixture	943.396 mg/kg
ATE (Dermal) of the mixture	Not classified (no significant component)

ETHANEDIOL

LD50 (Oral):	7,712 mg/kg	Species/guidelines: Ratto
LD50 (Dermal):	> 3,500 mg/kg	Species/guidelines: topo
LC50 (Inhalation mists/powders):	> 2.5 mg/l	Exposure duration: 4 hours Species/guidelines: Ratto
ATE (Oral)	500 mg/kg	estimate from table 3.1.2 of Annex I of the CLP (figure used for calculation of the acute toxicity estimate of the mixture)

11.1.6 SKIN CORROSION/IRRITATION

Does not meet the classification criteria for this hazard class

11.1.7 SERIOUS EYE DAMAGE / IRRITATION

Does not meet the classification criteria for this hazard class

11.1.8 RESPIRATORY OR SKIN SENSITISATION

Does not meet the classification criteria for this hazard class

11.1.9 GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

11.1.10 CARCINOGENICITY

Does not meet the classification criteria for this hazard class

ETHANEDIOL

Available studies have shown no carcinogenic potential. In a carcinogenicity study lasting two years, carried out by the US National Toxicology Program (NTP), in which ethylene glycol was administered in the feed, "no evidence of carcinogenic activity" in male and female B6C3F1 mice was observed (NTP, 1993).

11.1.11 REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

11.1.12 STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

11.1.13 STOT - REPEATED EXPOSURE

May cause damage to organs through prolonged or repeated exposure.

ETHANEDIOL

Possible damage.

Target organs

ETHANEDIOL

Kidney

11.1.14 ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

11.2 Information on other hazards

Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with human health effects under evaluation.

12 Ecological information

Use this product according to good working practices. Avoid littering. Inform the competent authorities, should the product reach waterways or contaminate soil or vegetation.

12.1 Toxicity

ETHANEDIOL

EC50 - for Crustacea	> 100 mg/l	Exposure duration: 48 hours Species/guidelines: Daphnia magna
LC50 - for Fish	72,860 mg/l	Exposure duration: 96 hours Species/guidelines: Pimepales promelas
EC50 - for Algae / Aquatic Plants	> 6,500 mg/l	Exposure duration: 96 hours Species/guidelines: Selenastrum capricornutum
Chronic NOEC for Fish	15,830 mg/l	Species/guidelines: Pimephales promelas (7 gg)

12.2 Persistence and degradability

ETHANEDIOL

Solubility in water	1,000 ≤ x ≤ 10,000 mg/l
Degradability	Rapidly degradable

It oxidizes rapidly in air by photochemical reaction

12.3 Bioaccumulative potential

ETHANEDIOL

Partition coefficient n-octanol/water	-1.4 LogKow

12.4 Mobility in soil

ETHANEDIOL

Very high mobility potential

12.5 Results of PBT and vPvB assessment

On the basis of available data, the product does not contain any PBT or vPvB in percentage ≥ than 0,1%.

12.6 Endocrine disrupting properties

Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with environmental effects under evaluation.

12.7 Other adverse effects

Information not available.

13 Disposal considerations

13.1 Waste treatment methods

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.
Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.
The management of waste arising from the use or dispersal of this product must be organised in accordance with occupational safety regulations. See section 8 for possible need for PPE.
CONTAMINATED PACKAGING
Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

Hazardous waste classification - Reg. (UE) 1357/2014
HP 5 – Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
HP 6 – Acute Toxicity

14 Transport information

The product is not dangerous under current provisions of the Code of International Carriage of Dangerous Goods by Road (ADR) and by Rail (RID), of the International Maritime Dangerous Goods Code (IMDG), and of the International Air Transport Association (IATA) regulations.

14.1 UN number or ID number

Not applicable

14.2 UN proper shipping name

Not applicable

14.3 Transport hazard class(es)

Not applicable

14.4 Packing group

Not applicable

14.5 Environmental hazards

Not applicable

14.6 Special precautions for user

Not applicable

14.7 Maritime transport in bulk according to IMO instruments

Not applicable

15 Regulatory information

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

Seveso Category - Directive 2012/18/EU:
None

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006		
	Restrictions	Registration Number EU
Product restrictions	3	
Contained substance		
None		

Regulation (EU) 2019/1148 - on the marketing and use of explosives precursors
Not applicable

Substances in Candidate List (Art. 59 REACH)	Registration Number EU
On the basis of available data, the product does not contain any SVHC in percentage ≥ than 0,1%.	

Substances subject to authorisation (Annex XIV REACH)	Authorisation Number	Sunset date	Registration Number EU
None			

Substances subject to exportation reporting pursuant to Regulation (EU) 649/2012:
None

Substances subject to the Rotterdam Convention:
None

Substances subject to the Stockholm Convention:
None

Regulation (EU) 2019/1021 - on persistent organic pollutants
None

Healthcare controls
Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

German regulation on the classification of substances hazardous to water (AwSV, vom 18. April 2017)
None

15.2 Chemical safety assessment

A chemical safety assessment has been performed for the following contained substances

ETHANEDIOL

16 Other information

Text of hazard (H) indications mentioned in section 2-3 of the sheet:	
Acute Tox. 4	Acute toxicity, category 4
STOT RE 2	Specific target organ toxicity - repeated exposure, category 2
H302	Harmful if swallowed.
H373	May cause damage to organs through prolonged or repeated exposure.

Legend

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- ATE: Acute Toxicity Estimate
- CAS: Chemical Abstract Service Number
- CLP: Regulation (EC) 1272/2008
- DNEL: Derived No Effect Level
- EC50: Effective concentration (required to induce a 50% effect)
- EC: Identifier in ESIS (European archive of existing substances)
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent, bioaccumulative and toxic
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PMT: Persistent, mobile and toxic
- PNEC: Predicted no effect concentration
- REACH: Regulation (EC) 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA: Time-weighted average exposure limit
- TWA STEL: Short-term exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very persistent and very bioaccumulative
- vPvM: Very persistent and very mobile
- WGK: Water hazard classes (German).

General Bibliography

1. Regulation (EC) 1907/2006 (REACH) of the European Parliament

Section 16

General Bibliography

2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
3. Regulation (EU) 2020/878 (II Annex of REACH Regulation)
4. Regulation (EC) 790/2009 (I Atp. CLP) of the European Parliament
5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
12. Regulation (EU) 2016/1179 (IX Atp. CLP)
13. Regulation (EU) 2017/776 (X Atp. CLP)
14. Regulation (EU) 2018/669 (XI Atp. CLP)
15. Regulation (EU) 2019/521 (XII Atp. CLP)
16. Delegated Regulation (UE) 2018/1480 (XIII Atp. CLP)
17. Regulation (EU) 2019/1148
18. Delegated Regulation (UE) 2020/217 (XIV Atp. CLP)
19. Delegated Regulation (UE) 2020/1182 (XV Atp. CLP)
20. Delegated Regulation (UE) 2021/643 (XVI Atp. CLP)
21. Delegated Regulation (UE) 2021/849 (XVII Atp. CLP)
22. Delegated Regulation (UE) 2022/692 (XVIII Atp. CLP)
23. Delegated Regulation (UE) 2023/707
24. Delegated Regulation (UE) 2023/1434 (XIX Atp. CLP)
25. Delegated Regulation (UE) 2023/1435 (XX Atp. CLP)

- The Merck Index. - 10th Edition
- Handling Chemical Safety
- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- IFA GESTIS website
- ECHA website
- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy

Note for users

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.
This document must not be regarded as a guarantee on any specific product property.
The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.
Provide appointed staff with adequate training on how to use chemical products.

Calculation methods for classification

Chemical and physical hazards:
Product classification derives from criteria established by the CLP Regulation, Annex I, Part 2. The data for evaluation of chemical-physical properties are reported in section 9.
Health hazards:
Product classification is based on calculation methods as per Annex I of CLP, Part 3, unless determined otherwise in Section 11.
Environmental hazards:
Product classification is based on calculation methods as per Annex I of CLP, Part 4, unless determined otherwise in Section 12.

Changes from the previous revision

9 Physical and chemical properties

9.1 Information on basic physical and chemical properties