



Be Right™

SAFETY DATA SHEET

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

Issue Date 31-Mar-2005

Revision Date 06-Sep-2023

Version 6

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

1.1. Product identifier

Product Code(s) 1429449
Product Name Bleaching 3 Reagent
Unique Formula Identifier (UFI) Y5G0-5EQ5-R00W-2JDP

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

Recommended Use Water Analysis. Determination of aluminum.
Uses advised against Consumer use

1.3. Details of the supplier of the safety data sheet

Supplier

HACH UK
Laser House
Ground Floor, Suite B
Waterfront Quay, Salford Quays
GB - Manchester, M50 3XW
Tel. +44 (0) 161 872 1487
info-uk@hach.com

HACH Ireland
Unit 34 GB Business Park
Little Island
IRL-Co. Cork
T45 H681
Tel. +353 (0)146 02 522
info-ie@hach.com

1.4. Emergency telephone number

UK: Chemtrec: +44 20 3807 3798
IE: National Poisons Information Centre (NPIC) 01 809 2566 (24/7)

Section 2: HAZARDS 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 A - (H314)
Serious eye damage/eye irritation	Category 1 - (H318)
Specific target organ toxicity — single exposure	Category 3 - (H335)

2.2. Label elements

Regulation (EC) No 1272/2008

Contains Tetrasodium pyrophosphate, Potassium pyrosulfate



Signal word

Danger

Hazard statements

H314 - Causes severe skin burns and eye damage

H332 - Harmful if inhaled

H335 - May cause respiratory irritation

Precautionary statements

P260 - Do not breathe dust/fume/gas/mist/vapours/spray

P271 - Use only outdoors or in a well-ventilated area

P280 - Wear protective gloves/protective clothing and eye/face protection

P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

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

P363 - Wash contaminated clothing before reuse

2.3. Other hazards

No information available.

PBT & vPvB

This mixture contains no substance considered to be persistent, bioaccumulating or toxic (PBT)

This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB)

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Chemical name	CAS No. EC No. Index No.	Weight-%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
Tetrasodium pyrophosphate	7722-88-5 231-767-1 -	50 - 60%	Eye Irrit. 2 - H319 STOT SE 3 - H335		-	-
Potassium pyrosulfate	7790-62-7 232-216-8 -	40 - 50%	Skin Corr. 1A - H314 Eye Dam. 1 - H318 Acute Tox. 3 - H331		-	-

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

Acute Toxicity Estimate

No information available

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapour - mg/L	Inhalation LC50 - 4 hour - gas - ppm
Tetrasodium pyrophosphate 7722-88-5	2980 mg/kg	> 2000 mg/kg	None reported	None reported	None reported
Potassium pyrosulfate 7790-62-7	None reported	None reported	0.375 mg/L	None reported	None reported

Section 4: FIRST AID MEASURES**4.1. Description of first aid measures****General advice**

Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

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 attention.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical attention.

Skin contact

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical attention.

Ingestion

Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Get immediate medical attention.

Self-protection of the first aider Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Avoid breathing dust/fume/gas/mist/vapours/spray. Use personal protective equipment as required. See section 8 for more information.

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

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

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

Note to doctors Treat symptomatically.

Section 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media No information available.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapours.

Hazardous combustion products Sulphur oxides. Phosphorus oxides.

5.3. Advice for firefighters

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

Additional information Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Avoid generation of dust. Do not breathe dust.

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. 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 Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Take up mechanically, placing in appropriate containers for disposal. Avoid creating dust.

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.

Section 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 it before reuse. Avoid breathing vapours or mists.

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

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. Keep out of the reach of children. Store away from other materials.

7.3. Specific end use(s)

Specific use(s) Analytical reagent.

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

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure Limits

Chemical name	European Union	United Kingdom	Ireland
Tetrasodium pyrophosphate 7722-88-5	-	TWA: 5 mg/m ³ STEL: 15 mg/m ³	TWA: 5 mg/m ³ STEL: 15 mg/m ³

Information on monitoring procedures Refer to European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) or equivalent national standard(s).

Derived No Effect Level (DNEL) No information available.

Predicted No Effect Concentration (PNEC) No information available.

Additional information No information available.

8.2. Exposure controls

Engineering controls Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Personal protective equipment **Eye/face protection**

Tight sealing safety goggles. Wear safety glasses with side shields (or goggles).

Hand protection

Gloves must be inspected prior to use. The selected protective gloves have to satisfy the specifications of EU Directive 2016/425 and the standard EN 374-1:2016 derived from it. Chemical resistant gloves made of butyl rubber or nitrile rubber category III acco. Wear suitable gloves. Impervious gloves.

Gloves			
Duration of contact	PPE - Glove material	Glove thickness	Break through time
Long term (repeated)	Wear protective Viton™ gloves	0,70 mm	>480 minutes
Short term	Wear protective nitrile rubber gloves	0,20 mm	>30 minutes

Skin and body protection Wear suitable protective clothing. Long sleeved clothing.

Respiratory protection Ensure adequate ventilation. No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. Wear breathing apparatus if exposed to vapours/dusts/aerosols.

Recommended Filter type: ABEK-P3.

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

Environmental exposure controls Do not allow into any sewer, on the ground or into any body of water.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state Solid

Colour white

Odour Irritating

Odour threshold No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Molecular weight	No data available	

pH	3.85	5% Solution
Melting point / freezing point	= 210 °C / 410 °F	
Initial boiling point and boiling range	No data available	
Evaporation rate	Not applicable	
Vapour pressure	Not applicable	
Relative vapor density	No data available	
Partition coefficient	log K _{ow} ~ 0	
Soil Organic Carbon-Water Partition Coefficient	log K _{oc} ~ 0	
Autoignition temperature	No data available	
Decomposition temperature	No data available	
Dynamic viscosity	Not applicable	
Kinematic viscosity	Not applicable	
Relative density	2.48 g/cm ³	@ 20 °C

Solubility(ies)**Water solubility**

Water solubility classification	Water solubility	Water Solubility Temperature
Soluble	> 1000 mg/L	25 °C / 77 °F

Solubility in other solvents

Chemical Name	Solubility classification	Solubility	Solubility Temperature
Acid	Soluble	> 1000 mg/L	25 °C / 77 °F

Metal Corrosivity

Steel Corrosion Rate	0.03 mm/yr / 0 in/yr
Aluminum Corrosion Rate	0.41 mm/yr / 0.02 in/yr

Explosive properties

Upper explosion limit	No data available
Lower explosion limit	No data available

Flammable properties

Flash point	Not applicable
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Flammability

Upper flammability limit:	No data available
Lower flammability limit	No data available

Oxidising properties No data available.

Bulk density No data available

9.2. Other information

No information available.

Section 10: STABILITY AND REACTIVITY**10.1. Reactivity****Reactivity** None under normal use conditions.**10.2. Chemical stability****Stability** Stable under normal conditions.**10.3. Possibility of hazardous reactions****Possibility of hazardous reactions** None under normal processing.**Hazardous polymerisation** 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** Acids. Bases. Oxidising agent.**10.6. Hazardous decomposition products****Hazardous Decomposition Products** Thermal decomposition can lead to release of irritating and toxic gases and vapours.
Phosphorus oxides. Sulphur oxides.**Section 11: TOXICOLOGICAL INFORMATION****11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute toxicity**

Harmful if inhaled

Mixture No data available.

Substance Test data reported below.

Oral Exposure Route:

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Tetrasodium pyrophosphate	Rat LD ₅₀	2980 mg/kg	None reported	None reported	RTECS

Dermal Exposure Route:

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Tetrasodium	Rabbit	> 2000 mg/kg	None reported	None reported	RTECS

pyrophosphate	LD ₅₀				
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Inhalation (Dust/Mist) Exposure Route:

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Potassium pyrosulfate	Rat LC ₅₀	0.375 mg/L	4 hours	Upper Respiratory Tract lesions	ECHA

Acute Toxicity Estimate (ATE)

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

ATEmix (oral)	99,999.00 mg/kg
ATEmix (dermal)	99,999.00 mg/kg
ATEmix (inhalation-dust/mist)	1.04 mg/l
ATEmix (inhalation-vapour)	99,999.00 mg/l
ATEmix (inhalation-gas)	99,999.00 ppm

Unknown acute toxicity

0 % of the mixture consists of ingredient(s) of unknown toxicity.

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Skin corrosion/irritation

Causes severe burns.

Mixture No data available.

Substance Test data reported below.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Tetrasodium pyrophosphate	Patch test	Rabbit	500 mg	None reported	Not corrosive or irritating to skin	ECHA
Potassium pyrosulfate	None reported	None reported	None reported	None reported	Corrosive to skin	Vendor SDS

Serious eye damage/eye irritation

Classification based on data available for ingredients. Causes serious eye damage. Causes burns.

Mixture No data available.

Substance Test data reported below.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Tetrasodium pyrophosphate	Draize Test	Rabbit	95 mg	4 hours	Corrosive to eyes	ECHA
Potassium pyrosulfate	None reported	None reported	None reported	None reported	Corrosive to eyes	Vendor SDS

Respiratory or skin sensitisation

Based on available data, the classification criteria are not met.

Mixture No data available.

Substance No data available.

STOT - single exposure

May cause respiratory irritation.

Mixture No data available.

Substance No data available.

STOT - repeated exposure

Based on available data, the classification criteria are not met.

Mixture No data available.

Substance No data available.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Mixture invitro **Data** No data available.

Substance invitro **Data** No data available.

Mixture invivo **Data** No data available.

Substance invivo **Data** No data available.

Carcinogenicity

Based on available data, the classification criteria are not met.

Mixture No data available.

Substance No data available.

Reproductive toxicity

Based on available data, the classification criteria are not met.

Mixture No data available.

Substance No data available.

Aspiration hazard

Based on available data, the classification criteria are not met.

11.2. Information on other hazards

Other dangerous properties can not be excluded. Handle in accordance with good industrial hygiene and safety practice.

11.2.1. Endocrine disrupting properties

Endocrine disrupting properties This product does not contain any known or suspected endocrine disruptors.

11.2.2. Other information

Other adverse effects No information available.

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity Based on available data, the classification criteria are not met.

Unknown aquatic toxicity Contains 0 % of components with unknown hazards to the aquatic environment.

Mixture

Acute aquatic toxicity: No data available.

Aquatic Chronic Toxicity: No data available.

Substance

Acute aquatic toxicity: Test data reported below.

Fish:

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Potassium pyrosulfate	96 hours	<i>Oncorhynchus mykiss</i>	LC ₅₀	420 mg/L	ERMA
Magnesium sulfate	96 hours	<i>Gambusia affinis</i>	LC ₅₀	15500 mg/L	IUCLID

Crustacea:

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Potassium pyrosulfate	48 Hours	<i>Daphnia magna</i>	EC ₅₀	140 mg/L	ERMA

Algae:

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Magnesium sulfate	72 Hours	<i>Scenedesmus subspicatus</i>	EC ₅₀	2700 mg/L	IUCLID

Aquatic Chronic Toxicity: Test data reported below.

Fish:

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Tetrasodium pyrophosphate	48 hours	<i>Leuciscus idus</i>	LC	1500 mg/L	IUCLID

12.2. Persistence and degradability

Mixture No data available.

12.3. Bioaccumulative potential

Mixture: No data available.

Partition coefficient log K_{ow} ~ 0

12.4. Mobility in soil

Soil Organic Carbon-Water Partition Coefficient log K_{oc} ~ 0

12.5. Results of PBT and vPvB assessment

The components in this formulation do not meet the criteria for classification as PBT or vPvB.

Chemical name	PBT and vPvB assessment
Tetrasodium pyrophosphate	The substance is not PBT / vPvB
Potassium pyrosulfate	PBT assessment does not apply

12.6. Endocrine disrupting properties

Endocrine Disruptor Information: This product does not contain any known or suspected endocrine disruptors

12.7. Other adverse effects

No information available.

Ozone: Not applicable

Ozone depletion potential (ODP): No information available

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods**Advice on Disposal**

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Waste disposal number of waste from residues/unused products

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste.

Waste disposal number of used product

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste.

Contaminated packaging

Dispose of contents/containers in accordance with local regulations.

Other Information

Waste codes should be assigned by the user based on the application for which the product was used.

Section 14: TRANSPORT INFORMATION

ADR

14.1 UN number or ID number	3260
14.2 UN proper shipping name	CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (Potassium pyrosulfate)
14.3 Transport hazard class(es)	8
14.4 Packing Group	II
14.5 Environmental hazards	Not applicable
14.6 Special precautions for user	
Special Provisions	274

Classification code C2
Tunnel restriction code (E)

IATA

14.1 UN number or ID number UN3260
14.2 UN proper shipping name Corrosive solid, acidic, inorganic, n.o.s. (Potassium pyrosulfate)
14.3 Transport hazard class(es) 8
14.4 Packing group II
14.5 Environmental hazards Not applicable
14.6 Special precautions for user
Special Provisions A3, A803

IMDG

14.1 UN number or ID number UN3260
14.2 UN proper shipping name CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (POTASSIUM PYROSULFATE)
14.3 Transport hazard class(es) 8
14.4 Packing Group II
14.5 Environmental hazards Not applicable
14.6 Special precautions for user
Special Provisions 274
EmS-No F-A, S-B
14.7 Maritime transport in bulk according to IMO instruments No information available

Additional information

There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is not in a reagent set or kit, the classification given above applies.

If the item is part of a reagent set or kit the classification would change to the following:

UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III.

If the item is not regulated, the Chemical Kit classification does not apply.

Section 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulations****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

Take note of Directive 94/33/EC on the protection of young people at work

Persistent Organic Pollutants Not applicable

Dangerous substance category per Seveso Directive (2012/18/EU)

• Non-controlled

Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable

Germany

Water hazard class (WGK) slightly hazardous to water (WGK 1)

International Inventories

EINECS/ELINCS	Complies
TSCA	Complies
DSL/NDSL	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

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 Chemical safety assessments for substances in this mixture were not carried out.

Section 16: OTHER INFORMATION

Issue Date	31-Mar-2005
Revision Date	06-Sep-2023
Revision Note	updated SDS sections: 2

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend

**	Hazard Designation
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieure
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
CAS	Chemical Abstracts Service Number
Ceiling	Maximum limit value
CLP	Classification, Labelling and Packaging of substances and mixtures [Regulation (EC) No. 1272/2008]
DNEL	Derived No Effect Level (DNEL)
EC	European Community
ECHA	ECHA (The European Chemicals Agency)

EC50	Effective Concentration to 50% of a test population
EEC	European Economic Community
EN	European Standard
IMDG	International Maritime Dangerous Goods (IMDG)
IATA	International Air Transport Association (IATA)
IATA-DGR	International Air Transport Association - Dangerous Goods Regulations
ICAO	International Civil Aviation Organization
ICAO-TI	International Civil Aviation Organization - Technical Instructions
IUCLID	IUCLID (The International Uniform Chemical Information Database)
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
LOAEL	Lowest observed adverse effect level
LOAEC	Lowest observed adverse effect concentration
LC50	Lethal Concentration to 50% of a test population
LD50	Lethal Dose to 50% of a test population (Median Lethal Dose)
LOLI	LOLI (List of Lists - An International Chemical Regulatory Database)
MAK	Maximale Arbeitsplatz-Konzentration, a German expression corresponding to threshold limit value, which relates to safe daily exposure levels to chemical substances
NOAEL	NOAEL (No observed adverse effect level)
NOAEC	No observed adverse effect concentration
OSHA	OSHA (Occupational Safety and Health Administration of the US Department of Labour)
PEC	Predicted Effect Concentration
PNEC	Predicted No Effect Concentration (PNEC)
PBT	Persistent, Bioaccumulative, and Toxic (PBT) Chemicals
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals [Regulation (EC) No. 1907/2006]
RTECS	RTECS (Registry of Toxic Effects of Chemical Substances)
TWA	TWA (time-weighted average)
SKN*	Skin designation
SKN+	Skin sensitisation
STEL	STEL (Short Term Exposure Limit)
STOT	Specific Target Organ Toxicity
STOT RE	Specific target organ toxicity — repeated exposure
STOT SE	Specific target organ toxicity — single exposure
SVHC	Substances of Very High Concern
TLV	Threshold Limit Value
TRGS	Technical rules for hazardous substances, Germany
TSCA	Toxic Substances Control Act
UN	United Nations
vPvB	very persistent and very bioaccumulative
VOC	Volatile organic compounds
AwSV	Administrative regulation of water polluting substances, Germany

Key literature references and sources for data

See Section 11: TOXICOLOGICAL INFORMATION

See Section 12: ECOLOGICAL INFORMATION

Classification procedure

Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - Vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method
Skin sensitisation	Calculation method
Mutagenicity	Calculation method

Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration toxicity	Calculation method
Ozone	Calculation method

Training Advice 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

Restrictions on use For Laboratory Use Only.

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

End of Safety Data Sheet