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

1.1 Product identifier

- Trade name BARIUM CARBONATE A

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

Uses of the Substance / Mixture

- Use in the manufacturing of other barium substances
- Use as reactive processing aid (sulfate removal)
- Glass industry
- Manufacture of ceramic materials
- Manufacture of electro-ceramic materials
- Manufacture of glazes, frits and enamels
- Use in welding electrode coating
- Use in the preparation of slurry
- Manufacture of pyrotechnical products
- Welding in industrial and professional settings
- Contact your supplier for additional information

Uses advised against

- none

1.3 Details of the supplier of the safety data sheet

Company

Kandelium Barium Strontium GmbH & Co. KG
Am Gueterbahnhof, 53557 Bad Hoenningen, Germany
Tel: +49 2635 73 0
Fax: +49 2635 73 150

1.4 Emergency telephone

FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CONTACT CHEMTREC (24-Hour Number): 800-424-9300 within the United States and Canada, or 703-527-3887 for international collect calls.
+1 215 207 0061

SECTION 2: Hazards identification

Although OSHA has not adopted the environmental portion of the GHS regulations, this document may include information on environmental effects.

2.1 Classification of the substance or mixture

HCS 2012 (29 CFR 1910.1200)

Acute toxicity, Category 4	H302: Harmful if swallowed.

2.2 Label elements

HCS 2012 (29 CFR 1910.1200)

Pictogram



Signal Word

- Warning

Hazard Statements

- H302 Harmful if swallowed.

Precautionary Statements

Prevention

- P264 Wash skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.

Response

- P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.

Disposal

- P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards which do not result in classification

- H401: Toxic to aquatic life.

SECTION 3: Composition/information on ingredients

3.1 Substance

Hazardous Ingredients and Impurities

Chemical name	Identification number CAS-No.	Concentration [%]
Barium carbonate	513-77-9	>= 95 - < 99
Barium sulfate	7727-43-7	>= 1 - < 5

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

3.2 Mixture

- Not applicable, this product is a substance.

SECTION 4: First aid measures

4.1 Description of first-aid measures

In case of inhalation

- Move to fresh air.
- If symptoms persist, call a physician.

In case of skin contact

- Remove and wash contaminated clothing before re-use.
- Wash off with plenty of water.
- If symptoms persist, call a physician.

In case of eye contact

- Rinse thoroughly with plenty of water, also under the eyelids.
- If eye irritation persists, consult a specialist.

In case of ingestion

- Call a physician immediately.
- Take victim immediately to hospital.
- If swallowed, rinse mouth with water (only if the person is conscious).
- Artificial respiration and/or oxygen may be necessary.

4.2 Most important symptoms and effects, both acute and delayed

In case of inhalation

Effects

- May cause irritation of the mucous membranes.
- Risk of pulmonary overload (respirable particulates)
- Possible risk of irreversible effects through inhalation.

In case of skin contact

Effects

- Prolonged skin contact may cause skin irritation.

In case of eye contact

Effects

- Contact with eyes may cause irritation.

In case of ingestion

Effects

- Acute intoxication by inhalation or ingestion of water soluble barium salts causes vomiting, diarrhea, convulsive tremors and muscular paralysis.
- Risk of convulsions, pulmonary arrest.
- Risk of cardiac rhythm alteration, sudden cardiac failure.
- Risk of shock.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician

- Give to drink 30 grams of sodium sulfate in 250 ml of fresh water.
- Immediate medical attention is required.
- Medical examination necessary even only on suspicion of intoxication.

SECTION 5: Firefighting measures

Flash point	Not applicable
Autoignition temperature	Not applicable
Flammability / Explosive limit	No data available

5.1 Extinguishing media

Suitable extinguishing media

- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

- None.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire fighting

- Not combustible.

Hazardous combustion products:

- Barium oxide
- Other hazardous decomposition products may be formed.

5.3 Advice for firefighters

Special protective equipment for fire-fighters

- In the event of fire, wear self-contained breathing apparatus.
- Use personal protective equipment.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for emergency responders

- Use personal protective equipment.
- Prevent further leakage or spillage.

Advice for non-emergency personnel

- Evacuate personnel to safe areas.
- Avoid dust formation.

6.2 Environmental precautions

- Should not be released into the environment.
- Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

- Pick up and transfer to properly labeled containers.
- Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

- Refer to protective measures listed in sections 7 and 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Use only in well-ventilated areas.

Hygiene measures

- Handle in accordance with good industrial hygiene and safety practice.
- Wash hands before breaks and at the end of workday.
- When using do not eat, drink or smoke.
- Eye wash bottles or eye wash stations in compliance with applicable standards.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions

- Store in original container.
- Keep in a well-ventilated place.
- Keep in a dry place.
- Keep in properly labeled containers.
- Keep container closed.

- Keep away from:
- Incompatible products

Packaging material

Suitable material
- Paper.

- Polyethylene

7.3 Specific end use(s)

- Contact your supplier for additional information

SECTION 8: Exposure controls/personal protection

Introductory Remarks: These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

8.1 Control parameters

Components with workplace occupational exposure limits

Components	Value type	Value	Basis
Barium carbonate	TWA	0.5 mg/m3	Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants
	Expressed as :Barium		
Barium carbonate	TWA	0.5 mg/m3	American Conference of Governmental Industrial Hygienists
	Expressed as :Barium		
Barium carbonate	TWA	0.5 mg/m3	National Institute for Occupational Safety and Health
	Expressed as :Barium		
Barium sulfate	TWA	5 mg/m3	American Conference of Governmental Industrial Hygienists
	Form of exposure : Inhalable particulate matter		

Barium sulfate	TWA	5 mg/m3	National Institute for Occupational Safety and Health
	Form of exposure : Respirable		
Barium sulfate	TWA	10 mg/m3	National Institute for Occupational Safety and Health
	Form of exposure : total		
Barium sulfate	TWA	15 mg/m3	Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants
	Form of exposure : total dust		
Barium sulfate	TWA	5 mg/m3	Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants
	Form of exposure : respirable fraction		

NIOSH IDLH (Immediately Dangerous to Life or Health Concentrations)

Components	CAS-No.	Concentration
Barium carbonate	513-77-9	50 milligram per cubic meter

8.2 Exposure controls

Control measures

Engineering measures
- Ensure adequate ventilation.
- Apply technical measures to comply with the occupational exposure limits.

Individual protection measures

Respiratory protection
- In case of insufficient ventilation, wear suitable respiratory equipment.
- Respirator with a dust filter
- Use only respiratory protection that conforms to international/ national standards.
- Recommended Filter type: P3 filter
- Use NIOSH approved respiratory protection.

Hand protection
- Impervious gloves

Suitable material
- PVC
- Natural Rubber

Eye protection
- Safety glasses with side-shields
- Dust proof goggles, if dusty.

Skin and body protection
- Long sleeved clothing

Hygiene measures
- Handle in accordance with good industrial hygiene and safety practice.
- Wash hands before breaks and at the end of workday.
- When using do not eat, drink or smoke.
- Eye wash bottles or eye wash stations in compliance with applicable standards.

SECTION 9: Physical and chemical properties

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product information phone number in Section 1 for its exact specifications.

9.1 Information on basic physical and chemical properties

Physical state	solid
Form	Crystalline powder
Color	white
Odor	odorless
Odor Threshold	No data available
Melting point/freezing point	Melting point/range: > 1652 °F (> 900 °C) (0.76 mmHg (1.013 hPa))
Initial boiling point and boiling range	Boiling point/boiling range: 2,840 °F (1,560 °C) Thermal decomposition: yes
Flammability (solid, gas)	The product is not flammable.
Flammability (liquids)	No data available
Flammability / Explosive limit	No data available
Flash point	Not applicable
Autoignition temperature	No data available
Decomposition temperature	2,516 °F (1,380 °C)
pH	5.0 - 7.0 (68 °F (20 °C))
Viscosity	No data available
Solubility	Water solubility: 14 mg/l (68 °F (20 °C)) slightly soluble Solubility in other solvents: Hydrogen chloride: soluble Nitric acid: soluble Ethanol: soluble Sulphuric acid: insoluble
Partition coefficient: n-octanol/water	Not applicable
Vapor pressure	Not applicable
Density	Bulk density: 400 - 2,000 kg/m3
Relative density	4.31 (68 °F (20 °C))

Relative vapor density	Not applicable
Particle characteristics	Particle size: 2.32 µm , d 50
Evaporation rate (Butylacetate = 1)	No data available

9.2 Other information

Explosiveness	Not explosive
Oxidizing properties	Not considered as oxidizing.
Self-ignition	Not applicable
Impact sensitivity	Not explosive
Molecular weight	197.3 g/mol

SECTION 10: Stability and reactivity

10.1 Reactivity

- Contact with acids liberates CO2, sometimes violently.

10.2 Chemical stability

- Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

- No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

- none

10.5 Incompatible materials

- Acids

10.6 Hazardous decomposition products

- Barium oxide
- Other hazardous decomposition products may be formed.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity

Barium carbonate	LD50 : 1,690 mg/kg - Rat , male and female Method: OECD Test Guideline 401 This product is classified as acute toxicity category 4
Barium sulfate	LD50 : > 5,000 mg/kg , male Method: OECD Test Guideline 401 Not classified as harmful if swallowed Published data

Acute inhalation toxicity	No data available
Acute dermal toxicity	
Barium carbonate	By analogy LD50 : > 2,000 mg/kg - Rat Method: OECD Test Guideline 402 Not classified as hazardous for acute dermal toxicity according to GHS.
Barium sulfate	By analogy LD50 : > 2,000 mg/kg - Rat Not classified as harmful by contact with skin Published data
Acute toxicity (other routes of administration)	No data available
Skin corrosion/irritation	
Barium carbonate	By analogy No skin irritation Method: OECD Test Guideline 439 Unpublished internal reports
Barium sulfate	By analogy No skin irritation in vitro test Unpublished reports
Serious eye damage/eye irritation	
Barium carbonate	Rabbit No eye irritation Method: OECD Test Guideline 405 Unpublished internal reports
Barium sulfate	Rabbit No eye irritation Method: OECD Test Guideline 405 Unpublished reports
Respiratory or skin sensitization	
Barium carbonate	By analogy Local lymph node assay - Mouse Does not cause skin sensitization. Method: OECD Test Guideline 429 Unpublished internal reports
Barium sulfate	By analogy Local lymph node assay - Mouse Does not cause skin sensitization. Method: OECD Test Guideline 429 Unpublished reports
Mutagenicity	
Genotoxicity in vitro	
Barium carbonate	By analogy

	Ames test with and without metabolic activation negative Method: OECD Test Guideline 471 Published data In vitro tests did not show mutagenic effects By analogy Chromosome aberration test in vitro Strain: CHO with and without metabolic activation negative Method: OECD Test Guideline 473 Published data In vitro tests did not show mutagenic effects Gene mutation assays in mammalian cells. Strain: Mouse with and without metabolic activation negative Method: OECD Test Guideline 476 Published data In vitro tests did not show mutagenic effects
Barium sulfate	By analogy In vitro tests did not show mutagenic effects
Genotoxicity in vivo	No data available
Carcinogenicity	
Barium carbonate	By analogy Rat Oral Exposure duration: 2 y NOAEL: 91mg/kg No carcinogenic effects have been observed Published data By analogy Mouse Oral Exposure duration: 2 y NOAEL: 91mg/kg No carcinogenic effects have been observed Published data
Barium sulfate	By analogy

Rat

Mouse

Oral
Exposure duration: 2 y
No carcinogenic effects have been observed
Published data

This product does not contain any ingredient designated as probable or suspected human carcinogens by:
NTP
IARC
OSHA

Toxicity for reproduction and development

Toxicity to reproduction / fertility

Barium carbonate	By analogy Rat, male and female, Oral Fertility NOAEL Parent: 258 - 290 mg/kg Published data
	By analogy
	Mouse, male and female, Oral Fertility NOAEL Parent: 258 - 290 mg/kg Published data

Developmental Toxicity/Teratogenicity

Barium carbonate	By analogy Rat, female, Oral General Toxicity Maternal NOAEL: >= 16.9 mg/kg Teratogenicity NOAEL:>= 56.2mg/kg Method: OECD Test Guideline 414 Test substance, Barium, Unpublished internal reports

STOT

STOT-single exposure

Barium carbonate	The substance or mixture is not classified as specific target organ toxicant, single exposure according to GHS criteria.
Barium sulfate	The substance or mixture is not classified as specific target organ toxicant, single exposure according to GHS criteria.

STOT-repeated exposure

Barium carbonate	The substance or mixture is not classified as specific target organ toxicant, repeated exposure according to GHS criteria.
Barium sulfate	The substance or mixture is not classified as specific target organ toxicant, repeated exposure according to GHS criteria.
Barium carbonate	Inhalation 90 Days - Rat , male and female NOAEL: 61 - 81 mg/kg Test substance: Barium Target Organs: Cardio-vascular system, hematology system, Adrenal gland Published data

Oral 90 Days - Mouse , male and female
NOAEL: 61 - 81 mg/kg
Test substance: Barium
Target Organs: Cardio-vascular system, hematology system, Adrenal gland
Published data

Oral Repeated exposure - Mouse
Target Organs: Cardio-vascular system, hematology system, Kidney, Adrenal gland

Oral 92 Days - Rat
NOAEL: 61 - 81 ppm
Test substance: Barium
Target Organs: Cardio-vascular system, hematology system, Kidney, Adrenal gland

Oral 92 Days - Mouse
NOAEL: 61 - 81 ppm
Test substance: Barium
Target Organs: Cardio-vascular system, hematology system, Kidney, Adrenal gland

Barium sulfate

Oral exposure 90-day - Rat , for males and females
NOAEL: > 104 mg/kg
Target Organs: Cardio-vascular system, hematology system, Adrenal gland
drinking water
Published data

Experience with human exposure
No data available

CMR effects

Carcinogenicity

Barium carbonate

No evidence of carcinogenicity in animal studies.

Mutagenicity

Barium carbonate

Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Aspiration toxicity
No data available

SECTION 12: Ecological information

12.1 Toxicity

Aquatic Compartment

Acute toxicity to fish

Barium carbonate

By analogy

LC50 - 96 h : > 3.5 mg/l - Danio rerio (zebra fish)
static test
Analytical monitoring: yes

Method: OECD Test Guideline 201
Not harmful to fish (LC/LL50 > 100 mg/L)
Unpublished internal reports

Barium sulfate	LC50 - 96 h : > 3.5 mg/l - Danio rerio (zebra fish) static test Analytical monitoring: yes Test substance: Barium chloride dihydrate Method: OECD Test Guideline 203 Unpublished internal reports

Acute toxicity to daphnia and other aquatic invertebrates

Barium carbonate	By analogy LC50 - 48 h : 14.5 mg/l - Daphnia magna (Water flea) static test Analytical monitoring: yes Method: OECD Test Guideline 202 Not harmful to aquatic invertebrates. (EC/EL50 > 100 mg/L) Published data
Barium sulfate	EC50 - 48 h : 14.5 mg/l - Daphnia magna (Water flea) static test Analytical monitoring: yes Test substance: Barium chloride dihydrate Method: OECD Test Guideline 202 Published data

Toxicity to aquatic plants

Barium carbonate	By analogy ErC50 - 72 h : > 1.15 mg/l - Pseudokirchneriella subcapitata (green algae) static test Analytical monitoring: yes Method: OECD Test Guideline 201 Not harmful to algae (EC/EL50 > 100 mg/L) Unpublished internal reports By analogy NOEC - 72 h : > 1.15 mg/l - Pseudokirchneriella subcapitata (green algae) static test Analytical monitoring: yes Method: OECD Test Guideline 201 Growth rate No adverse chronic effect observed up to and including the threshold of 1 mg / L. Unpublished internal reports
Barium sulfate	ErC50 - 72 h : > 1.15 mg/l - Pseudokirchneriella subcapitata (microalgae) static test Analytical monitoring: yes Test substance: Barium chloride dihydrate Method: OECD Test Guideline 201 Unpublished internal reports

NOEC - 72 h : > 1.15 mg/l - Pseudokirchneriella subcapitata (microalgae)
static test
Analytical monitoring: yes
Endpoint: Growth rate
Test substance: Barium chloride dihydrate
Method: OECD Test Guideline 201
Unpublished internal reports

Toxicity to microorganisms

Barium carbonate — By analogy

NOEC - 3 h : 622 mg/l - activated sludge
static test
Analytical monitoring: yes
Method: OECD Test Guideline 209
Unpublished internal reports

Barium sulfate — NOEC - 3 h : 622 mg/l - activated sludge
Respiration inhibition
Analytical monitoring: yes
Test substance: Barium chloride dihydrate
Method: OECD Test Guideline 209
Unpublished internal reports

Chronic toxicity to fish

Barium carbonate — By analogy

NOEC: > 1.26 mg/l - 33 Days - Danio rerio (zebra fish)
semi-static test
Analytical monitoring: yes
Method: OECD Test Guideline 210
Unpublished internal reports
No adverse chronic effect observed up to and including the threshold of 1 mg / L.

Barium sulfate — NOEC: > 1.26 mg/l - 33 d - Danio rerio (zebra fish)
semi-static test
Analytical monitoring: yes
Test substance: Barium chloride dihydrate
Method: OECD Test Guideline 210
Unpublished internal reports

Chronic toxicity to daphnia and other aquatic invertebrates

Barium carbonate — By analogy

NOEC: 2.9 mg/l - 21 Days - Daphnia magna (Water flea)
semi-static test
Analytical monitoring: yes
Method: OECD Test Guideline 211
Published data
No adverse chronic effect observed up to and including the threshold of 1 mg / L.

Barium sulfate — NOEC: 2.9 mg/l - 21 Days - Daphnia magna (Water flea)
semi-static test
Analytical monitoring: yes
Test substance: Barium chloride dihydrate
Method: OECD Test Guideline 211
Published data

Terrestrial Compartment

Toxicity to soil dwelling organisms

Barium sulfate	By analogy NOEC: 258 mg/kg - 21 Days - Eisenia fetida (earthworms) Reproduction Test Test substance: Barium Published data By analogy NOEC: 211 mg/kg - 28 Days - Folsomia candida Reproduction Test Test substance: Barium Published data

12.2 Persistence and degradability

Abiotic degradation

Photodegradation

Barium carbonate	Water/soil slow ionization and cation precipitation in presence of sulfates or carbonates

Physical- and photo-chemical elimination No data available

Biodegradation

Biodegradability

Barium carbonate	Not applicable
Barium sulfate	Not applicable, inorganic substance

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water No data available

Bioconcentration factor (BCF)

Barium carbonate	potential accumulation of the cation
Barium sulfate	Not potentially bioaccumulable

12.4 Mobility in soil

Adsorption potential (Koc)

Barium sulfate	Water/soil low solubility and mobility

Known distribution to environmental compartments

Barium carbonate	Ultimate destination of the product: Water Soil

12.5 Results of PBT and vPvB assessment No data available

12.6 Other adverse effects

Ecotoxicity assessment

Short-term (acute) aquatic hazard

Barium carbonate	No toxicity at the limit of solubility.
Barium sulfate	No toxicity at the limit of solubility.

Long-term (chronic) aquatic hazard

Barium carbonate	No adverse chronic effect observed up to and including the threshold of 1 mg / L.
Barium sulfate	No adverse chronic effect observed up to and including the threshold of 1 mg / L.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product Disposal

- In accordance with local and national regulations.
- Use a solution of sodium or magnesium sulfate or possibly a dilute solution of sulfuric acid to form a sulfate precipitate.
- Dispose of wastes in an approved waste disposal facility.

Waste Code

- Environmental Protection Agency
- Hazardous Waste – YES

- RCRA Hazardous Waste (40 CFR 302)
- D005 - Barium

Advice on cleaning and disposal of packaging

- Containers that cannot be cleaned must be treated as waste.
- Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities.

SECTION 14: Transport information

DOT
not regulated

TDG
not regulated

NOM
not regulated

IMDG
not regulated

IATA
not regulated

Note: The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transportation regulations for hazardous materials, it would be advisable to check their validity with your sales office.

SECTION 15: Regulatory information

15.1 Notification status

Inventory Information	Status
United States TSCA Inventory	- Listed on Inventory
Mexico INSQ (INSQ)	- In compliance with the inventory
Canadian Domestic Substances List (DSL)	- Listed on Inventory
New Zealand. Inventory of Chemical Substances	- In compliance with the inventory
Australia Inventory of Chemical Substances (AICS)	- Listed on Inventory
Japan. CSCL - Inventory of Existing and New Chemical Substances	- Listed on Inventory
Korea. Korean Existing Chemicals Inventory (KECI)	- Listed on Inventory
China. Inventory of Existing Chemical Substances in China (IECSC)	- Listed on Inventory
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	- Listed on Inventory
EU. European Registration, Evaluation, Authorization and Restriction of Chemical (REACH)	- When purchased from a Solvay legal entity based in the EEA ("European Economic Area"), this product is compliant with the registration provisions of the REACH Regulation (EC) No. 1907/2006 as all its components are either excluded, exempt, and/or registered. When purchased from a legal entity outside of the EEA, please contact your local representative for additional information.

15.2 Federal Regulations

US. EPA EPCRA SARA Title III

SARA Hazard Designation Sections 311/312 (40 CFR 370)

Acute toxicity (any route of exposure)	Yes

The categories not mentioned are not relevant for the product.

Section 313 Toxic Chemicals (40 CFR 372.65)

The following components are subject to reporting levels established by SARA Title III, Section 313:

Components	CAS-No.	Concentration
Barium carbonate	513-77-9	>= 97%

The following components are subject to reporting levels established by SARA Title III, Section 313:

Barium carbonate	513-77-9	90- 100%

Section 302 Emergency Planning Extremely Hazardous Substance Threshold Planning Quantity (40 CFR 355)

This material does not contain any components with a section 302 EHS TPQ.

Section 302 Emergency Planning Extremely Hazardous Substance Reportable Quantity (40 CFR 355)
This material does not contain any components with a SARA 302 RQ.

Section 304 Emergency Release Notification Reportable Quantity (40 CFR 355)
This material does not contain any components with a section 304 EHS RQ.

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

This material does not contain any components with a CERCLA RQ.

15.3 State Regulations

US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

SECTION 16: Other information

NFPA (National Fire Protection Association) - Classification

Health	1 slight
Flammability	1 slight
Instability or Reactivity	0 minimal

HMIS (Hazardous Materials Identification System (Paint & Coating)) - Classification

Health	1 slight
Flammability	1 slight
Reactivity	0 minimal
PPE	Determined by User; dependent on local conditions

Further information

- Product evaluated under the US GHS format.
- Distribute new edition to clients
- Update

Date Prepared: 03/02/2021

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

- TWA: 8-hour, time-weighted average
- ACGIH: American Conference of Governmental Industrial Hygienists
- OSHA: Occupational Safety and Health Administration
- NTP: National Toxicology Program
- IARC: International Agency for Research on Cancer
- NIOSH: National Institute for Occupational Safety and Health
- ADR: European Agreement on International Carriage of Dangerous Goods by Road.
- ADN: European Agreement on the International Carriage of Dangerous Goods by Inland Waterways.
- RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
- IATA: International Air Transport Association.
- ICAO-TI: Technical Specification for Safe Transport of Dangerous Goods by Air.
- IMDG: International Maritime Dangerous Goods.
- TWA: Time weighted average
- ATE: Estimated value of acute toxicity
- EC: European Community number
- CAS: Chemical Abstracts Service.
- LD50: Substance that causes 50% (half) death in the test animals group (Median Fatal Dose).
- LC50: Substance concentration causing 50% (half) death in the test animals group.
- EC50: Effective Concentration of the substance causing the maximum of 50%.

- PBT: Persistent, Bioaccumulative and Toxic substance.
- vPvB: Very Persistent and Very Bioaccumulative.
- SEA: Classification, labeling, packaging regulation
- DNEL: Derived No Effect Level
- PNEC: Predicted No Effect Concentration
- STOT: Specific Target Organ Toxicity

Not all acronyms listed above are referenced in this SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. Such information is only given as a guidance to help the user handle, use, process, store, transport, dispose, and release the product in satisfactory safety conditions and is not to be considered as a warranty or quality specification. It should be used in conjunction with technical sheets but do not replace them. Thus, the information only relates to the designated specific product and may not be applicable if such product is used in combination with other materials or in any other manufacturing process, unless otherwise specifically indicated. It does not release the user from ensuring he is in conformity with all regulations linked to its activity.