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according to 1907/2006/EC, Article 31

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

· **1.1 Product identifier**

· **Product name: KP259 - Sulphate Precipitant / Barium chloride crystals**

· **Catalog number:** 56P025991, 56P025910, 56P025920, 56P025950

· **CAS No.:**
10326-27-9

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

· **Application of the substance / the preparation:** Reagent for water analysis

· **1.3 Details of the supplier of the safety data sheet**

· **Supplier:**
Tintometer GmbH
Schleefstraße 8-12
44287 Dortmund
Made in Germany
www.lovibond.com
phone: +49 (0)231 94510-0
e-mail: sales@lovibond.com

The Tintometer Limited
Lovibond® House
Sun Rise Way
Amesbury
Wiltshire SP4 7GR
United Kingdom
phone : +44 1980 664800
e-mail: SDS@lovibond.uk

· **Informing department:**
e-mail: sds@lovibond.com
Product Safety Department

· **1.4 Emergency telephone number:**
+44 1235 239670
Languages: English

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008**


GHS06 skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.


GHS07

Acute Tox. 4 H332 Harmful if inhaled.

· **2.2 Label elements**
· **Labelling according to Regulation (EC) No 1272/2008**
The substance is classified and labelled according to the GB CLP regulation.
· **Hazard pictograms**


GHS06

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· **Signal word** Danger
· **Hazard-determining components of labelling:**
barium chloride dihydrate
· **Hazard statements**
H301 Toxic if swallowed.
H332 Harmful if inhaled.
· **Precautionary statements**

P261	Avoid breathing dust.
P280	Wear protective gloves/protective clothing/eye protection.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P405	Store locked up.

· **2.3 Other hazards** No further relevant information available.

· **Results of PBT and vPvB assessment**
Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.
· **Determination of endocrine-disrupting properties**
The product does not contain substances with endocrine disrupting properties.

SECTION 3: Composition/information on ingredients

· **3.1 Substances**
· **CAS No. Designation:**
CAS: 10326-27-9 barium chloride dihydrate
· **Identification number(s):**
· **EC No:** 233-788-1
· **Index No:** 056-004-00-8
· **Acute toxicity estimate (ATE) values** LD50 oral: 100 mg/kg

SECTION 4: First aid measures

· **4.1 Description of first aid measures**
· **General information** Instantly remove any clothing soiled by the product.
· **After inhalation** Supply fresh air or oxygen; call for doctor.
· **After skin contact**
If skin irritation or rash occurs: Get medical advice/attention.
Instantly wash with water and soap and rinse thoroughly.
· **After eye contact**
Rinse opened eye for several minutes under running water (at least 15 min). If symptoms persist, consult doctor.
· **After swallowing**
Rinse out mouth and then drink 1-2 glasses of water.
Do not induce vomiting; instantly call for medical help.
· **4.2 Most important symptoms and effects, both acute and delayed:**
irritations
after inhalation:
mucosal irritations, cough, shortness of breath
after swallowing:
mucous membrane irritation
sickness
vomiting
dizziness
pain
diarrhoea
Systemic effects:
cardiovascular disorders
respiratory paralysis
· **Danger**
Danger of system failure.
Danger of disturbed cardiac rhythm.

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· **4.3 Indication of any immediate medical attention and special treatment needed:**
1-5% sodium sulfate solution in acute poisoning

SECTION 5: Firefighting measures

· **5.1 Extinguishing media**
· **Suitable extinguishing agents** Use fire fighting measures that suit the environment.
· **5.2 Special hazards arising from the substance or mixture**
The product is not combustible.
Formation of toxic gases is possible during heating or in case of fire.
Hydrogen chloride (HCl)
· **5.3 Advice for firefighters**
· **Protective equipment:**
Wear self-contained breathing apparatus.
Wear full protective suit.
· **Additional information**
Collect contaminated fire fighting water separately. It must not enter drains.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Ambient fire may liberate hazardous vapours.

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**
· **Advice for non-emergency personnel:**
Wear protective equipment. Keep unprotected persons away.
Avoid substance contact.
Ensure adequate ventilation
Use breathing protection against the effects of fumes/dust/aerosol.
Avoid breathing dust.
· **Advice for emergency responders:** Protective equipment: see section 8

· **6.2 Environmental precautions:** Do not allow product to reach sewage system or water bodies.
· **6.3 Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Collect mechanically.
Dispose of contaminated material as waste according to item 13.
· **6.4 Reference to other sections**
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**
· **Advice on safe handling:**
Prevent formation of dust.
Provide suction extractors if dust is formed.
· **Hygiene measures:**
Do not inhale dust / smoke / mist.
Avoid contact with the skin.
Take off immediately all contaminated clothing.
Wash hands during breaks and at the end of the work.
Do not eat, drink or smoke when using this product.

· **7.2 Conditions for safe storage, including any incompatibilities**
· **Requirements to be met by storerooms and containers:** Store in cool location.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:**
Store in a locked cabinet or with access restricted to technical experts or their assistants.
Protect from heat and direct sunlight.
Protect from the effects of light.
Store under dry conditions.
Protect from humidity and keep away from water.

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· **Recommended storage temperature:** 20°C +/- 5°C

· **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

· **8.1 Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
CAS: 10326-27-9 barium chloride dihydrate	
WEL (Great Britain)	Long-term value: 0.5 mg/m³ as Ba
IOELV (European Union)	Long-term value: 0.5 mg/m³ as Ba

· **Regulatory information**
WEL (Great Britain): EH40/2020
IOELV (European Union): (EU) 2019/1831
· **Recommended monitoring procedures:**
Methods for measurement of the workplace atmosphere have to correspond to the requirements of norms DIN EN 482 and DIN EN 689.

· **Additional information:** The lists that were valid during the compilation were used as basis.

· **8.2 Exposure controls**

· **Engineering measures:**
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.
See item 7.

· **Individual protection measures, such as personal protective equipment**
Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled.
· **Eye/face protection** Safety glasses
· **Hand protection**
Protective gloves.
Preventive skin protection by use of skin-protecting agents is recommended.
After use of gloves apply skin-cleaning agents and skin cosmetics.
· **Material of gloves**
nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.11 mm
· **Penetration time of glove material**
Value for the permeation: Level = 1 (< 10 min)
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Other skin protection (body protection):** Protective work clothing.
· **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
· **Recommended filter device for short term use:** Filter P3

· **Environmental exposure controls** Do not allow product to reach sewage system or water bodies.

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**	
· **Physical state**	Solid.
· **Form:**	Crystalline powder
· **Colour:**	White
· **Odour:**	Odourless
· **Odour threshold:**	Not applicable.
· **Melting point/Freezing point:**	960°C
· **Boiling point or initial boiling point and boiling range**	1560°C
· **Flammability**	The product is not combustible.
· **Explosive properties:**	Product is not explosive.
· **Lower and upper explosion limit**	
Lower:	Not applicable.
Upper:	Not applicable.

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· **Flash point:**	Not applicable.
· **Auto-ignition temperature:**	Not applicable (solid).
· **Decomposition temperature:**	>100 °C
· **pH (50 g/l) at 25°C**	5–8
· **Kinematic viscosity**	Not applicable (solid).
· **Solubility**	
· **Water at 20°C:**	357 g/l Soluble
· **Partition coefficient n-octanol/water (log value)**	Not applicable.
· **Vapour pressure:**	Not applicable.
· **Density and/or relative density**	
· **Density at 20°C:**	3.86 g/cm³
· **Relative density:**	Not determined.
· **Relative gas density**	Not applicable (solid).
· **Particle characteristics**	Not determined.

· **9.2 Other information**

· **Information with regard to physical hazard classes**	
· **Corrosive to metals**	Void
· **Other safety characteristics**	
· **Oxidising properties:**	none
· **Additional information**	
· **Solids content:**	100.0 %

SECTION 10: Stability and reactivity

· **10.1 Reactivity** see section 10.3
· **10.2 Chemical stability**
Stable at ambient temperature (room temperature).
Loss of constitutional water on heating
· **10.3 Possibility of hazardous reactions**
Reacts with reducing agents
Reacts with strong oxidizing agents
Reacts with acids
furan-2-percarbonic acid
---> Explosive
· **10.4 Conditions to avoid** To avoid thermal decomposition do not overheat.
· **10.5 Incompatible materials:** No further relevant information available.
· **10.6 Hazardous decomposition products:**
Chlorine compounds
In case of fire: see section 5.

SECTION 11: Toxicological information

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

· **Acute toxicity**
Toxic if swallowed.
Harmful if inhaled.

· **LD/LC50 values that are relevant for classification:**

CAS: 10326-27-9 barium chloride dihydrate

Oral	LD50	100 mg/kg (ATE) (for calculation)
		118 mg/kg (rat) (anhydrous - IUCLID)
Inhalative	LC50/4h	1.5 mg/l (ATE)

· **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
· **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
· **Information on components:** CAS 10326-27-9: chronic: dermatitis

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· **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 (specific target organ toxicity) -single exposure** Based on available data, the classification criteria are not met.
· **STOT (specific target organ toxicity) -repeated exposure** Based on available data, the classification criteria are not met.

· **Aspiration hazard** Based on available data, the classification criteria are not met.

· **Information on likely routes of exposure**
The main route of absorption of barium chloride is through the respiratory tract in the form of dusts or aerosols.
Soluble barium compounds are well absorbed by inhalation.[GESTIS]

· **Additional toxicological information:**
CAS 10326-27-9: Absorption through gastro-intestinal tract, mucous membranes

CAS: 10326-27-9 barium chloride dihydrate	
.	(source: GESTIS) Main toxic effects: acute: Irritation of the mucous membranes, gastrointestinal complaints, hypokalemia, cardiac arrhythmia, muscle weakness, kidney damage. chronic: after repeated oral intake: kidney damage in animal experiments

· **11.2 Information on other hazards**
· **Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.

· **Other information**
This substance / mixture should be handled with particular care.
Other dangerous properties can not be excluded.
According to the information available to us, the chemical, physical and toxicological properties of the substances mentioned in Chapter 3 have not been thoroughly investigated.

SECTION 12: Ecological information

· **12.1 Toxicity**

· **Aquatic toxicity:**	
CAS: 10326-27-9 barium chloride dihydrate	
LC50	870 mg/l/48h (gold orfe) IUCLID
EC50	21.9 mg/l/48h (Daphnia magna) (IUCLID)

· **Other information:**
Toxic for fish:
Ba > 158 mg/l
· **12.2 Persistence and degradability** No further relevant information available.
· **Other information:** Methods for the determination of biodegradability are not applicable to inorganic substances.
· **12.3 Bioaccumulative potential**
Pow = n-octanol/wasser partition coefficient
log Pow < 1 = Does not accumulate in organisms.

CAS: 10326-27-9 barium chloride dihydrate	
log Pow	0.85 (.)

· **12.4 Mobility in soil** No further relevant information available.
· **12.5 Results of PBT and vPvB assessment**
Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.
· **12.6 Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.
· **12.7 Other adverse effects**
Reacts with water to harmful mixtures.
Avoid transfer into the environment.
· **Water hazard:**
Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.
Must not reach sewage water or drainage ditch undiluted or unneutralised.

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SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**
· **Recommendation**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Hand over to disposers of hazardous waste.

· **European waste catalogue**	
16 05 07*	discarded inorganic chemicals consisting of or containing hazardous substances

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.
· **Recommended cleaning agent:** Water, if necessary with cleaning agent.

SECTION 14: Transport information

· **14.1 UN number or ID number**	
· **ADR, IMDG, IATA**	UN1564
· **14.2 UN proper shipping name**	
· **ADR**	1564 BARIUM COMPOUND, N.O.S. (barium chloride dihydrate)
· **IMDG, IATA**	BARIUM COMPOUND, N.O.S. (barium chloride dihydrate)
· **14.3 Transport hazard class(es)**	
· **ADR**	

· **Class**	6.1 (T5) Toxic substances.
· **Label**	6.1
· **IMDG, IATA**	

· **Class**	6.1 Toxic substances.
· **Label**	6.1
· **14.4 Packing group**	
· **ADR, IMDG, IATA**	III
· **14.5 Environmental hazards:**	Not applicable.
· **14.6 Special precautions for user**	Warning: Toxic substances.
· **Kemler Number:**	60
· **EMS Number:**	F-A,S-A
· **Stowage Category**	A
· **14.7 Maritime transport in bulk according to IMO instruments**	Not applicable.
· **Transport/Additional information:**	
· **ADR**	
· **Limited quantities (LQ)**	5 kg
· **Excepted quantities (EQ)**	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· **Transport category**	2
· **Tunnel restriction code**	E

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· **IMDG**
· **Limited quantities (LQ)** 5 kg
· **Excepted quantities (EQ)** Code: E1
Maximum net quantity per inner packaging: 30 g
Maximum net quantity per outer packaging: 1000 g

*
SECTION 15: Regulatory information

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

· **Poisons Act UK**

· **Regulated explosives precursors**
Substance is not listed.

· **Regulated poisons**
Listed

· **Reportable explosives precursors**
Substance is not listed.

· **Reportable poisons**
Substance is not listed.

· **Regulation (EU) 2019/1148 on the marketing and use of explosives precursors** not regulated

· **Regulation (EU) No 649/2012 concerning the export and import of hazardous chemicals (PIC)**
Substance is not listed.

· **Regulation (EC) No 1334/2000 setting up a Community regime for the control of exports of dual-use items and technology:**
Substance is not listed.

· **Regulation (EC) No 273/2004 on drug precursors**
Substance is not listed.

· **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**
Substance is not listed.

· **Regulation (EC) No 1005/2009 on substances that deplete the ozone layer:**
Substance is not listed.

· **REGULATION (EU) 2019/1021 on persistent organic pollutants (POP)**
Substance is not listed.

· **LIST OF SUBSTANCES SUBJECT TO AUTHORISATION (ANNEX XIV)**
Substance is not listed.

· **Substances of very high concern (SVHC) according to REACH, Article 57**
This product does not contain any substances of very high concern above the legal concentration limit of ≥ 0.1% (w / w).
· **Substances of very high concern (SVHC) according to UK REACH**
This product does not contain any substances of very high concern above the legal concentration limit of ≥ 0.1% (w / w).

· **Directive 2012/18/EU (SEVESO III):**
· **Named dangerous substances - ANNEX I** Substance is not listed.

· **Information about limitation of use:** Employment restrictions concerning young persons must be observed (94/33/EC).

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Training hints** Provide adequate information, instruction and training for operators.

· **Abbreviations and acronyms:**
OECD: Organisation for Economic Co-operation and Development
STOT: specific target organ toxicity
SE: single exposure
RE: repeated exposure

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EC50: half maximal effective concentration
IC50: half maximal inhibitory concentration
NOEL or NOEC: No Observed Effect Level or Concentration
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
SVHC: Substances of Very High Concern
vPvB: very Persistent and very Bioaccumulative
Acute Tox. 3: Acute toxicity – Category 3
Acute Tox. 4: Acute toxicity – Category 4

· **Sources**
Data arise from safety data sheets, reference works and literature.
IUCLID (International Uniform Chemical Information Database)
GESTIS- Stoffdatenbank (Substance Database, Germany)

· *** Data compared to the previous version altered.**