

Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 02/14/2014

Reviewed on 02/14/2014

1 Identification

- **Product identifier**
- **Trade name:** **Sulfate Turbidity**
- **MSDS p/n:** 233268-001 Rev. H
 Part of Thermo Scientific item: Orion AC2082
- **Relevant identified uses of the substance or mixture and uses advised against:** No further relevant information available.
- **Application of the substance / the mixture:** Reagent for water analysis
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 Thermo Fisher Scientific
 22 Alpha Road
 Chelmsford, MA 01824
 USA
 phone: 978-232-6000
 Made in Germany
- CHEMTREC® 24 hr Emergency: US 800-424-9300; International 703-527-3887

2 Hazard(s) identification

- **Classification of the substance or mixture**

US-GHS



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Xn; Harmful

R20/22: Harmful by inhalation and if swallowed.

- **Label elements**

- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms** GHS07

- **Signal word** Warning

- **Hazard-determining components of labeling:**

barium chloride dihydrate

- **Hazard statements**

H302 Harmful if swallowed.

- **Precautionary statements**

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

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

P330 Rinse mouth.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **WHMIS classification:** Not controlled under WHMIS.

- **NFPA ratings (scale 0 - 4)**



Health = 2

Fire = 0

Reactivity = 0

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* 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Preparation contains inorganic compounds.

• Composition and Information on Ingredients:

CAS: 10326-27-9 EINECS: 233-788-1 Index number: 056-004-00-8 RTECS: CQ 8751000	barium chloride dihydrate	 T R25;  Xn R20  Acute Tox. 3, H301;  Acute Tox. 4, H332	10-20%
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- **REACH - pre-registered substances** All components are REACH pre-registered.
- **Additional information:** For the wording of the listed risk phrases refer to section 16.

4 First-aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes (15 min) under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink 1-2 glasses of water.
Immediately call a doctor.
- **Most important symptoms and effects, both acute and delayed**
mucous membrane irritation
after swallowing:
vomiting
sickness
diarrhoea
dizziness
resorption
respiratory paralysis
breathing difficulty
- **Danger:**
Danger of circulatory collapse.
Danger of disturbed cardiac rhythm.
- **Indication of any immediate medical attention and special treatment needed:**
1-5% sodium sulfate solution in acute poisoning

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Hydrogen chloride (HCl)
- **Advice for firefighters**
- **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
- **Additional information**
Collect contaminated fire fighting water separately. It must not enter the sewage system.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Ambient fire may liberate hazardous vapours.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow product to reach sewage system or any water course.
- **Methods and material for containment and cleaning up:**
Dispose contaminated material as waste according to item 13.

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Pick up mechanically.

Ensure adequate ventilation.

- **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

* 7 Handling and storage

- **Precautions for safe handling** Prevent formation of dust.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Store away from oxidizing agents.
- **Further information about storage conditions:**
 - Keep receptacle tightly sealed.
 - Protect from heat and direct sunlight.
 - Store in dry conditions.
 - Protect from humidity and water.
 - This product is hygroscopic.
 - Protect from exposure to the light.
- **Recommended storage temperature:** 20 °C +/- 5 °C (approx. 68°F)
- **Storage class:** 13
- **Specific end use(s)** No further relevant information available.

* 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

10326-27-9 barium chloride dihydrate (10-20%)

PEL (USA)	Long-term value: 0.5 mg/m ³ as Ba
REL (USA)	Long-term value: 0.5 mg/m ³ as Ba
TLV (USA)	Long-term value: 0.5 mg/m ³ as Ba
EL (Canada)	Long-term value: 0.5 mg/m ³ as Ba

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
 - Keep away from foodstuffs, beverages and feed.
 - Immediately remove all soiled and contaminated clothing.
 - Wash hands before breaks and at the end of work.
 - Store protective clothing separately.
 - Do not eat, drink, smoke or sniff while working.
- **Breathing equipment:** Use respiratory protective device against the effects of fumes/dust/aerosol.
- **Recommended filter device for short term use:** Filter P2
- **Protection of hands:**
 - 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**
 - The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
 - Value for the permeation: Level ≤ 1 (10 min)

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- **Eye protection:**
Safety glasses
use against the effects of fumes / dust
- **Body protection:** Protective work clothing

* 9 Physical and chemical properties

· Information on basic physical and chemical properties	
· Odor Threshold:	Not applicable.
· Appearance:	
Form:	Tablets
Color:	White
· Odor:	Odorless
· pH-value (13 g/l) at 20 °C (68 °F):	5.5
· Melting point/Melting range:	Undetermined.
· Boiling point/Boiling range:	Undetermined.
· Freezing Point:	Not applicable.
· Flash point:	Not applicable.
· Ignition temperature:	Undetermined.
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Specific Gravity:	Not applicable.
· Density at 20 °C (68 °F):	2.4 g/cm ³ (20.028 lbs/gal)
· Vapour density	Not applicable.
· Evaporation rate	Not applicable.
· Solubility in / Miscibility with Water:	Soluble.
· Coefficient of Water / Oil Distribution:	Not applicable.
· Solvent content:	
Organic solvents:	0.0 %
Solids content:	100.0 %
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity**
- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Possibility of hazardous reactions** Reacts with acids, alkalis and oxidizing agents.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:**
alkali metals
acids
reducing agents
furan-2-percarbonic acid
oxidizing agents
- **Hazardous decomposition products:**
Chlorine compounds
see chapter 5

* 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
Quantitative data on the toxicity of the preparation are not available.
The following statements refer to the individual components.

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LD/LC50 values that are relevant for classification:		
Oral	ATE _(MIX)	623 mg/kg (rat)
Inhalative	ATE _(MIX)	9.75 4h/ mg/l (rat)
10326-27-9 barium chloride dihydrate		
Oral	LD50	118 mg/kg (rat) anhydrous subst. - IUCLID
Inhalative	LC50	1.5 mg/l/4h (rat)
<ul style="list-style-type: none"> • Primary irritant effect: • on the skin: temporary erythema possible • on the eye: Irritating effect. • Sensitization: No sensitizing effects known. • Subacute to chronic toxicity: chronic: dermatitis • Additional toxicological information: Harmful • Carcinogenic categories 		
IARC (International Agency for Research on Cancer)		
None of the ingredients is listed.		
NTP (National Toxicology Program)		
None of the ingredients is listed.		
<ul style="list-style-type: none"> • Carcinogenicity: NTP? IARC Monographs? OSHA Regulated? see chapter 8 / 15 • Teratogenicity: Not found. • Mutagenicity: Not found. • Reproductive Toxicity: Not found. • Synergistic Products: None • CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction): CAS-No. 10326-27-9: Bacterial mutagenicity: Ames Test - negative (IUCLID) Mutagenicity (mammal cell test): negative (in vitro, IUCLID) 		

*12 Ecological information

• Toxicity		
• Aquatic toxicity:		
10326-27-9 barium chloride dihydrate		
EC50	21.9 mg/l/48h (Daphnia magna) IUCLID	
LC50	870 mg/l/48h (Leuciscus idus) IUCLID	
<ul style="list-style-type: none"> • Persistence and degradability No further relevant information available. • Other information: Quantitative data on the ecological effect of this preparation are not available. Does not cause biological oxygen deficit. • Bioaccumulative potential No further relevant information available. 		
Behavior in environmental systems:		
10326-27-9 barium chloride dihydrate		
log P(o/w)	0.85 (.)	
<ul style="list-style-type: none"> • Mobility in soil No further relevant information available. • Ecotoxicological effects: • Remark: Toxic for fish: Ba > 158 mg/l Reacts with water to harmful mixtures. • Algae toxicity: Ba: Sc. quadricauda > 34 mg/l Toxic for aquatic organisms 		

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- **Additional ecological information:**

- **General notes:**

Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.

- **Results of PBT and vPvB assessment** no data available

- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**

- **Recommendation:** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- **Uncleaned packagings:**

- **Recommendation:** Disposal must be made according to official regulations.

- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

*14 Transport information

• UN-Number • DOT, ADR, ADN, IMDG, IATA	none
• UN proper shipping name • DOT, ADR, ADN, IMDG, IATA	none
• Transport hazard class(es) • DOT, ADR, ADN, IMDG, IATA • Class	none
• Packing group • DOT, ADR, IMDG, IATA	none
• Environmental hazards: • Marine pollutant:	No
• Special precautions for user	Not applicable.
• Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
• Transport/Additional information: • Canadian TDG Class:	none

*15 Regulatory information

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

- Sara

- **Section 355 (Extremely hazardous substances):**

None of the ingredients is listed.

- **TSCA (Toxic Substances Control Act):**

99999-99-9 | several ingredients are listed

- **Proposition 65**

- **Chemicals known to cause cancer:**

None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

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· Chemicals known to cause developmental toxicity:	
None of the ingredients is listed.	
· Canadian Ingredient Disclosure List	
· Limit 0,1%	
None of the ingredients is listed.	
· Limit 1%	
barium, water-soluble compounds, n.o.s.	
None of the ingredients is listed.	
· Canadian Domestic Substances List (DSL)	
99999-99-9	several ingredients are listed
· Canadian Non-domestic Substance List	
None of the ingredients is listed.	
· EPA (Environmental Protection Agency)	
10326-27-9	barium chloride dihydrate
	D, CBD(inh), NL(oral)
· NIOSH-Ca (National Institute for Occupational Safety and Health)	
None of the ingredients is listed.	
· OSHA-Ca (Occupational Safety & Health Administration)	
None of the ingredients is listed.	
· Australian Inventory of Chemical Substances	
All ingredients are listed.	
· European EINECS	
All ingredients are listed.	
· Standard for the Uniform Scheduling of Drugs and Poisons	
99-99-9	one ingredient is listed
	S4

· Information about limitation of use:

Employment restrictions concerning pregnant and lactating women must be observed.
Employment restrictions concerning young persons must be observed.

· This product has been classified in accordance with the hazard criteria of the CPR and the SDS contains all of the information required by the CPR**· Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

*16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Relevant phrases

H301 Toxic if swallowed.

H332 Harmful if inhaled.

R20 Harmful by inhalation.

R25 Toxic if swallowed.

· Date of preparation / last revision 02/14/2014 / 43**· Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organization

EC50: effective concentration, 50 percent (in vivo)

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

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· Sources

ECOTOX Database

GESTIS-Stoffdatenbank

RTECS (Registry of Toxic Effects of Chemical Substances)

IUCLID (International Uniform Chemical Information Database)

NTP (National Toxicology Program)

Data arise from manufacturers' data sheets, reference works and literature.

· * Data compared to the previous version altered.

USA
