



BARIUM CARBONATE (13C, 98%+)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 14/12/2010

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Version: 5.0

CLM-466

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

1.1. Product identifier

Product form	: Substance
Substance name	: BARIUM CARBONATE (13C, 98%+)
EC Index-No.	: 056-003-00-2
EC-No.	: 208-167-3
CAS-No.	: 51956-33-3
Product code	: CLM-466
Formula	: Ba ⁺ CO ₃

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

1.2.1. Relevant identified uses

Main use category	: Professional use
Industrial/Professional use spec	: For professional use only

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Cambridge Isotope Laboratories, Inc.
50 Frontage Road
Andover, MA 01810
USA

USA: 1-800-322-1174 Int: 1-978-749-8000
cilsales@isotope.com www.isotope.com

Emergency telephone number

Emergency numbers:

Chemtrec: 1-800-424-9300 (24 hours)
International: 1-703-741-5970 (24 hours)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute Tox. 4 (Oral) H302

Full text of hazard classes and H-statements : see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Xn; R22

Full text of R-phrases: see section 16

GHS-US classification

Acute Tox. 4 (Oral) H302

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labeling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



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Signal word (CLP)	: Warning
Hazard statements (CLP)	: H302 - Harmful if swallowed
Precautionary statements (CLP)	: P264 - Wash Both hands thoroughly after handling. P270 - Do not eat, drink or smoke when using this product. P301+P312 - IF SWALLOWED: Call a doctor, a POISON CENTER if you feel unwell. P330 - Rinse mouth. P501 - Dispose of contents/container to Comply with applicable regulations

GHS-US labeling

Hazard pictograms (GHS-US)



GHS07

Signal word (GHS-US)	: Warning
Hazard statements (GHS-US)	: H302 - Harmful if swallowed
Precautionary statements (GHS-US)	: P264 - Wash Both hands thoroughly after handling. P270 - Do not eat, drink or smoke when using this product. P301+P312 - If swallowed: Call a poison center or doctor if you feel unwell P330 - Rinse mouth. P501 - Dispose of contents/container to Comply with applicable regulations

2.3. Other hazards

No additional information available

SECTION 3: Composition/Information on ingredients

3.1. Substances

Name	Product identifier	%	Classification according to Directive 67/548/EEC
BARIUM CARBONATE (13C, 98%+)	(CAS-No.) 51956-33-3 (EC-No.) 208-167-3 (EC Index-No.) 056-003-00-2	100	Xn; R22

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
BARIUM CARBONATE (13C, 98%+)	(CAS-No.) 51956-33-3 (EC-No.) 208-167-3 (EC Index-No.) 056-003-00-2	100	Acute Tox. 4 (Oral), H302

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

Name	Product identifier	%	GHS-US classification
BARIUM CARBONATE (13C, 98%+) (Main constituent)	(CAS-No.) 51956-33-3	100	Acute Tox. 4 (Oral), H302

Full text of H-phrases: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
First-aid measures after inhalation	: If breathed in, move person to fresh air. If not breathing, give artificial respiration. Consult a physician.
First-aid measures after skin contact	: Wash with soap and plenty of water. Consult a physician.
First-aid measures after eye contact	: Flush eyes with water as a precaution.
First-aid measures after ingestion	: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

Symptoms/effects after inhalation	: May be harmful if inhaled. Causes respiratory tract irritation.
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Symptoms/effects after skin contact : May be harmful if absorbed through the skin. Causes skin irritation.
Symptoms/effects after eye contact : May cause eye irritation.
Symptoms/effects after ingestion : Harmful if swallowed.

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

Firefighting instructions : Wear self contained breathing apparatus for fire fighting if necessary.
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Avoid breathing dust.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Do not let product enter drains.

6.3. Methods and material for containment and cleaning up

For containment : Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Keep container tightly closed in a dry and well-ventilated place.

Storage conditions : Store at room temperature away from light and moisture.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

BARIUM CARBONATE (13C, 98%+) (51956-33-3)		
Italy - Portugal - USA ACGIH	ACGIH TWA (mg/m ³)	0.5 mg/m ³ Eye irritation. Muscular stimulation. Skin irritation. Gastrointestinal irritation. Not classifiable as a human carcinogen. USA. ACGIH Threshold Limit Values (TLV)
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	0.5 mg/m ³ USA. NIOSH Recommended Exposure Limits
USA OSHA	OSHA PEL (TWA) (mg/m ³)	0.5 mg/m ³ USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
USA OSHA	OSHA PEL (Ceiling) (mg/m ³)	0.5 mg/m ³ California permissible exposure limits for chemical contaminants (Title 8, Article 107)

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8.2. Exposure controls

Appropriate engineering controls : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment : Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus.



Materials for protective clothing : Wear suitable protective clothing and gloves.

Hand protection : Wear suitable protective clothing and gloves.

Eye protection : Wear safety glasses with side shields (or goggles) and a face shield.

Skin and body protection : Wear complete suit protecting against chemicals according to concentration and amount of substance.

Respiratory protection : When appropriate, use NIOSH/CEN approved respirator.

Environmental exposure controls : Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Powder.
Molecular mass	: 198.33 g/mol (Labeled)
Color	: White.
Odor	: No data available
Odor threshold	: No data available
pH	: 6.8 at 3.67 g/L at 37 °C (99 °F)
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: >= 900 °C (>= 1,652 °F)
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: 4.29 g/cm ³ at 19 °C (66 °F)
Solubility	: Water: 0.0001 g/l - Slightly Soluble
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosion limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable if stored under recommended conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Not available.

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10.5. Incompatible materials

Strong acids. Barium oxide.

10.6. Hazardous decomposition products

carbon oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed.

BARIUM CARBONATE (13C, 98%+) (51956-33-3)	
LD50 oral rat	418 mg/kg
ATE CLP (oral)	418.000 mg/kg body weight

Skin corrosion/irritation	: Not classified No data available pH: 6.8 at 3.67 g/L at 37 °C (99 °F)
Serious eye damage/irritation	: Eyes - Rabbit Result: No eye irritation - 1 h. (OECD Test Guideline 405) pH: 6.8 at 3.67 g/L at 37 °C (99 °F)
Respiratory or skin sensitization	: Not available No data available
Germ cell mutagenicity	: Not available
Carcinogenicity	: Not classified
Reproductive toxicity	: Reproductive toxicity - Rat - Inhalation. Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count). Paternal Effects: Testes, epididymis, sperm duct. . Reproductive toxicity - Rat - Inhalation. Maternal Effects: Oogenesis. Maternal Effects: Ovaries, fallopian tubes.
Specific target organ toxicity – single exposure	: Not classified No data available
Specific target organ toxicity – repeated exposure	: Not classified No data available
Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: Diarrhea. Vomiting. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Stomach - Irregularities - Based on Human Evidence.
Symptoms/effects after inhalation	: May be harmful if inhaled. Causes respiratory tract irritation.
Symptoms/effects after skin contact	: May be harmful if absorbed through the skin. Causes skin irritation.
Symptoms/effects after eye contact	: May cause eye irritation.
Symptoms/effects after ingestion	: Harmful if swallowed.

SECTION 12: Ecological information

12.1. Toxicity

BARIUM CARBONATE (13C, 98%+) (51956-33-3)	
LC50 fish 1	6950 mg/l Gambusia affinis (Mosquito fish) - 96 h

12.2. Persistence and degradability

BARIUM CARBONATE (13C, 98%+) (51956-33-3)	
Persistence and degradability	Not available.

12.3. Bioaccumulative potential

BARIUM CARBONATE (13C, 98%+) (51956-33-3)	
Bioaccumulative potential	Not available.

12.4. Mobility in soil

BARIUM CARBONATE (13C, 98%+) (51956-33-3)	
Ecology - soil	Not available.

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

Other adverse effects : Not available.

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SECTION 13: Disposal considerations

13.1. Waste treatment methods

- Regional legislation (waste) : Waste materials should be disposed of under conditions which meet Federal, State, and local environmental control regulations.
- Product/Packaging disposal recommendations : Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
- Ecology - waste materials : Dispose of as unused product.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

- UN-No.(DOT) : 1564
- DOT NA no. UN1564

14.2. UN proper shipping name

- Proper Shipping Name (DOT) : Barium compounds, n.o.s.
- Class (DOT) : 6.1 - Class 6.1 - Poisonous materials 49 CFR 173.132
- Hazard labels (DOT) : 6.1 - Poison



- DOT Symbols : G - Identifies PSN requiring a technical name
- Packing group (DOT) : II - Medium Danger
- DOT Special Provisions (49 CFR 172.102) : IB8 - Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Fiberboard (11G); Wooden (11C, 11D and 11F); Flexible (13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2).
IP2 - When IBCs other than metal or rigid plastics IBCs are used, they must be offered for transportation in a closed freight container or a closed transport vehicle.
IP4 - Flexible, fiberboard or wooden IBCs must be sift-proof and water-resistant or be fitted with a sift-proof and water-resistant liner.
T3 - 2.65 178.274(d)(2) Normal..... 178.275(d)(2)
TP33 - The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which are filled and discharged at temperatures above their melting point which are cooled and transported as a solid mass. Solid substances transported or offered for transport above their melting point are authorized for transportation in portable tanks conforming to the provisions of portable tank instruction T4 for solid substances of packing group III or T7 for solid substances of packing group II, unless a tank with more stringent requirements for minimum shell thickness, maximum allowable working pressure, pressure-relief devices or bottom outlets are assigned in which case the more stringent tank instruction and special provisions shall apply. Filling limits must be in accordance with portable tank special provision TP3. Solids meeting the definition of an elevated temperature material must be transported in accordance with the applicable requirements of this subchapter.
- DOT Packaging Exceptions (49 CFR 173.xxx) : 153
- DOT Packaging Non Bulk (49 CFR 173.xxx) : 212
- DOT Packaging Bulk (49 CFR 173.xxx) : 242
- Marine pollutant : No

14.3. Additional information

- Other information : No supplementary information available.

Overland transport

- Packing group (ADR) : II
- Class (ADR) : 6.1 - Toxic substances
- Hazard identification number (Kemler No.) : 60
- Classification code (ADR) : T5

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Hazard labels (ADR) : 6.1 - Toxic substances



Orange plates :



Tunnel restriction code (ADR) : D/E

Limited quantities (ADR) : 500g

EAC : Z2

Excepted quantities (ADR) : E4

Transport by sea

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

MFAG-No : 154

Air transport

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 25 kg

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 100 kg

Civil Aeronautics Law : Toxic and infectious substances/Toxic substances

14.4. Environmental hazards

Other information : No supplementary information available.

14.5. Special precautions for user

14.6. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

BARIUM CARBONATE (13C, 98%+) (51956-33-3)

Subject to reporting requirements of United States SARA Section 313

SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard
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15.2. International regulations

CANADA

BARIUM CARBONATE (13C, 98%+) (51956-33-3)

Listed on the Canadian DSL (Domestic Substances List)

15.2.1. National regulations

No additional information available

15.3. US State regulations

BARIUM CARBONATE (13C, 98%+)(51956-33-3)

U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No

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State or local regulations

RTK - U.S. - Pennsylvania - RTK (Right to Know) List
RTK - U.S. - New Jersey - Right to Know Hazardous Substance List
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

SECTION 16: Other information

Other information : This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

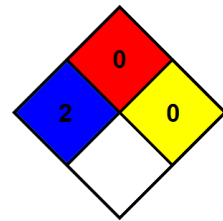
Full text of R-, H- and EUH-phrases:

Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
H302	Harmful if swallowed
R22	Harmful if swallowed
Xn	Harmful

NFPA health hazard : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur

Flammability : 0 Minimal Hazard

Physical : 0 Minimal Hazard

CIL Substance SDS

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product