



Safety Data Sheet

In accordance with CFR 1910.1200 (OSHA HCS)

SDS No. 205

Review Date: July 26, 2018

1 Identification of substance and company

Product name: ***Barium Titanate***
Product code: 14869, 15759, 18530, 18622, C2410, C2460, C2573, C2581, C2586, C2664, C2667
Relevant use and restrictions on use: Research and product development
Manufacturer/Supplier: Noah Technologies Corporation
1 Noah Park
San Antonio, Texas 78249-3419
Phone: 210-691-2000
Fax: 210-691-2600
Web site: www.noahtech.com
Emergency information: CHEMTREC
800-424-9300

2 Hazards identification

Emergency Overview:

Pictogram(s):



Signal word(s):

Warning

Hazard statements:

H302 + H332 - Harmful if swallowed or if inhaled

Precautionary statements:

P261 - Avoid breathing dust / fume / gas / mist / vapors / spray
P264 - Wash skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P301 + P312 + P330 - IF SWALLOWED: Call a POISON CENTER or doctor / physician if you feel unwell. Rinse mouth.
P304 + P340 + P312 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor / physician if you feel unwell.
P501 - Dispose of contents / container to an approved waste disposal plant

GHS Classification:

Acute toxicity, Oral - 4
Acute toxicity, Inhalation - 4

Hazards not otherwise classified:

None

HMIS ratings (scale 0-4):

Health hazard: 2*
Flammability: 0
Physical hazard: 0

3 Composition/Information on ingredients

Chemical name: Barium titanate
CAS number: 12047-27-7
EC number: 234-975-0
Formula: BaTiO₃
Synonyms: Barium metatitanate, Barium titanium oxide
Ingredients of known acute toxicity: Barium titanate

4 First aid measures

After inhalation: Move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
After skin contact: Wash off with soap and plenty of water. Consult a physician.
After eye contact: Flush eyes with plenty of water for at least 15 minutes.
After ingestion: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
Information for doctor: Show this safety data sheet to the doctor in attendance
Symptoms/effects; acute and delayed: Ingestion of barium compounds can cause gastric enteritis, vomiting, diarrhea, slow pulse, dizziness, ringing in the ears and muscular paralysis.
Immediate medical attention and special

treatment needed: No data available

5 Fire-fighting measures

Suitable and unsuitable extinguishing agents: Water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Use extinguishing media most suitable to surrounding fire conditions.

Special hazards caused by the material, its products of combustion or resulting gases: Barium and titanium oxides

Special fire fighting procedures: Wear self-contained breathing apparatus. Wear full protective equipment/clothing in fire situations.

Unusual fire and explosion hazard: No data available

6 Accidental release measures

Person-related safety precautions: Use personal protective equipment. Avoid dust formation. Avoid breathing dust, vapors, mist or gas. Ensure adequate ventilation.

Measures for environmental protection: Do not let product enter drains.

Measures for cleaning/collecting: Sweep up and shovel. Keep in suitable closed containers for disposal.

Additional information: See Section 7 for information on safe handling
See Section 8 for information on personal protective equipment
See Section 13 for information on disposal
See Section 15 for regulatory information

7 Handling and storage

Information for safe handling: Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Information about protection against explosions and fires: No data available

Storage requirements to be met by storerooms and containers: Store in tightly closed containers.
Store in a cool, dry place

Incompatibility (avoid contact with): Strong acids. Strong oxidizers.

Further information about storage conditions: No data available

8 Exposure controls/personal protection

Ventilation requirements: Local exhaust. Chemical fume hood.

Components with exposure limits that require monitoring: AGCIH TLV: TWA 0.5 mg(Ba)/m³
OSHA PEL: TWA 0.5 mg(Ba)/m³

Additional information: None

General protective and hygienic measures: The usual precautionary measures for handling chemicals should be adhered to
Keep away from foodstuffs, beverages and food
Instantly remove any soiled and impregnated garments
Wash hands during breaks and at the end of the work
Avoid contact with the eyes and skin

Personal protective equipment:

Respiratory protection: Filter-dust, fume, mist
(Use only NIOSH or CEN approved Equipment)

Hand protection: Handle with gloves. Natural rubber / Neoprene / Impervious
Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with product.

Eye protection: Safety glasses with side-shields

Skin protection: Protective work clothing sufficient to prevent contact.

Additional protective equipment: Emergency eyewash and safety shower

Precautionary labeling: Wash thoroughly after handling
Do not get in eyes, on skin or on clothing.
Do not breathe dust, vapor, mist or gas

9 Physical and chemical properties

Physical state: Powder

Color: White to light yellow

Odor: Odorless

Odor threshold: No data available

Molecular Weight (Calculated): 233.24

pH No data available

Melting point/freezing point/range: 1625 C

Boiling point/range: No data available

Sublimation temperature/start: No data available

Decomposition temperature: No data available

Flammability (solid, gas): Non-flammable

Flash point: No data available

Autoignition temperature:	No data available
Danger of explosion:	No data available
Flammable limits:	
Lower:	No data available
Upper:	No data available
Evaporation Rate:	No data available
Vapor pressure (mm Hg):	No data available
Vapor density:	No data available
Specific gravity:	5.95 g/cm ³ @ 20 C
Bulk density:	No data available
Solubility in/Miscibility with water:	Insoluble
Partition coefficient n-octanol/water:	No data available
Viscosity:	No data available
Other information:	No data available

10 Stability and reactivity

Reactivity:	No data available
Chemical stability:	Stable under recommended storage conditions
Possibility of hazardous reactions:	No data available
Conditions to be avoided:	No data available
	See section 7 for information on proper handling and storage
Materials to be avoided:	Strong acids. Strong oxidizers
Dangerous reactions:	No data available
Hazardous decomposition products: (thermal and other)	Barium and titanium oxides

11 Toxicological information

LD/LC50 values that are relevant for classification:	oral-rat LD ₅₀ : >12,000 mg/kg intraperitoneal-rat LD ₅₀ : 3 g/kg
Irritation or corrosion of skin:	No data available
Irritation or corrosion of eyes:	No data available
Primary irritant or corrosive effect:	
on the skin:	Mild
on the eye:	Mild
Sensitization:	No data available
Potential health effects:	
Inhalation:	No data available
Ingestion:	No data available
Skin:	No data available
Eyes:	No data available
Signs and symptoms of exposure:	Ingestion of barium compounds can cause gastric enteritis, vomiting, diarrhea, slow pulse, dizziness ringing in the ears and muscular paralysis. May be harmful if inhaled. Alkaline barium compounds may cause local irritation to the eyes, nose, throat and skin. When ingested or given orally, the soluble, ionized barium compounds exert a profound effect on all muscles. Barium compounds can cause irritation of the nose, throat and bronchi. Long term exposure to barium compounds can lead to baritosis, a benign pneumoconiosis. Prolonged skin contact may cause dermatitis.
Carcinogenicity:	IARC: No component of this product is identified as probable, possible or confirmed human carcinogen by IARC ACGIH: No component of this product is identified as a carcinogen or potential carcinogen by ACGIH NTP: No component of this product is identified as a known or anticipated carcinogen by NTP OSHA: No component of this product is identified as a carcinogen or potential carcinogen by OSHA
Additional information:	To the best of our knowledge the acute and chronic toxicity of this substance is not fully known

12 Ecotoxicological information

Toxicity:	
Toxicity to fish:	No data available
Toxicity to daphnia and other aquatic invertebrates:	No data available
Toxicity to algae:	No data available
Persistence and degradability:	
Biodegradability:	No data available
Bioaccumulative potential:	
Bioaccumulation:	No data available
Mobility in soil:	No data available
Other adverse effects:	No data available

13 Disposal considerations

Recommendation: Consult state, local or national regulation for proper disposal
Allow professional disposal company to handle waste
Must be specially treated under adherence to official regulations

Unclean packagings recommendation: Disposal must be made according to official regulations

14 Transport information

Land transport DOT

Proper shipping name: Chemicals Non-Hazardous
Technical name: Barium titanate

Air transport ICAO-TI and IATA-DGR:

Proper shipping name: Chemicals Non-Hazardous
Technical name: Barium titanate

UPS Ground / FedEx Ground

Proper shipping name: Chemicals Non-Hazardous
Technical name: Barium titanate

UPS Air

Proper shipping name: Chemicals Non-Hazardous
Technical name: Barium titanate

15 Regulatory information

SARA Section 302 Extremely Hazardous components and corresponding TPQs: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302

SARA Section 311 / 312 hazards: Acute Health Hazard, Chronic Health Hazard

SARA Section 313 components: The following components are subject to reporting levels established by SARA Title III, Section 313:
Barium titanium trioxide - CAS No. 12047-27-7 - Revision Date: 2007-07-1

California Proposition 65 components: This product does not contain any chemicals known to the State of California to cause cancer, birth defects or any other reproductive harm.

TSCA: Product is listed on the TSCA Inventory

16 Other information

The above information is accurate to the best of our knowledge. However, since data, safety standards and government regulation are subject to change and the conditions of handling and use, or misuse are beyond our control. NOAH MAKES NO WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR RELIANCE THEREON. User should satisfy himself that he has all current data relevant to his particular use.