

Bismuth(III) Titanate		Pricing >
Linear Formula	Bi ₂ Ti ₂ O ₇	
Pubchem CID	165913	
MDL Number	N/A	
EC No.	234-986-0	
IUPAC Name	dibismuth; oxygen(2-); titanium(4+)	
Beilstein/Reaxys No.	N/A	
SMILES	O=[Bi]O[Bi]=O.O=[Ti]=O.O=[Ti]=O	
Inchl Identifier	InChI=1S/2Bi.7O.2Ti	
Inchl Key	RXSQQXALSYZCOR-UHFFFAOYSA-N	
Signal Word	N/A	
Hazard Statements	N/A	
Hazard Codes	N/A	
Risk Codes	N/A	
Safety Statements	N/A	
Transport Information	N/A	

[Create Printable PDF](#)

SAFETY DATA SHEET

Date Accessed: 05/12/2024

Date Revised: 01/15/2022

SECTION 1. IDENTIFICATION

Product Identifiers: All applicable American Elements product codes for CAS #12048-51-0

Relevant identified uses of the substance:
Scientific research and development

Supplier details:
American Elements
10884 Weyburn Ave.
Los Angeles, CA 90024
Tel: +1 310-208-0551
Fax: +1 310-208-0351

Emergency telephone number:

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture
Not a hazardous substance or mixture.
GHS Label elements, including precautionary statements
Not a hazardous substance or mixture.
Hazards not otherwise classified (HNOC) or not covered by GHS-none

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances
Chemical characterization: Product does not burn
Formula: $\text{Bi}_2\text{O}_7\text{Ti}_2$
Molecular Weight: 625.69 g/mol
CAS-No.: 12048-51-0
EC-No.: 234-986-0
No ingredients are hazardous according to OSHA criteria.
No components need to be disclosed according to the applicable regulations.

SECTION 4. FIRST AID MEASURES

Description of first aid measures
If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration.
In case of skin contact
Wash off with soap and plenty of water.
In case of eye contact
Flush eyes with water as a precaution.
If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water.
Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11
Indication of any immediate medical attention and special treatment needed
no data available

SECTION 5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

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

Special hazards arising from the substance or mixture

Titanium/titanium oxides, Bismuth oxides

Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

Further information

The product itself does not burn.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing Vapors, mist or gas.

For personal protection see section 8.

Environmental precautions

Do not let product enter drains.

Methods and materials for containment and cleaning up

Sweep up and shovel. Keep in suitable, closed containers for disposal.

Reference to other sections

For disposal see section 13.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.

Conditions for safe storage, including any incompatibilities

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

Keep in a dry place.

Specific end use(s)

Apart from the uses mentioned in section 1 no other specific uses are stipulated

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Exposure controls

Appropriate engineering controls

General industrial hygiene practice.

Personal protective equipment

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Do not let product enter drains.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance

Form: powder

Odor

no data available

Odor Threshold

no data available

pH

no data available

Melting point/freezing point

no data available

Initial boiling point and boiling range
no data available
Flash point
not applicable
Evaporation rate
no data available
Flammability (solid, gas)
no data available
Upper/lower flammability or explosive limits
no data available
Vapor pressure
no data available
Vapor density
no data available
Relative density
no data available
Water solubility
no data available
Partition coefficient: n-octanol/water
no data available
Auto-ignition temperature
no data available
Decomposition temperature
no data available
Viscosity
no data available
Explosive properties
no data available
Oxidizing properties
no data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity
no data available
Chemical stability
Stable under recommended storage conditions.
Possibility of hazardous reactions
no data available
Conditions to avoid
no data available
Incompatible materials
Strong oxidizing agents
Hazardous decomposition products
Other decomposition products-no data available
In the event of fire: see section 5

SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity
LD50 Oral-rat-> 12,000 mg/kg
Inhalation: no data available
Dermal: no data available
no data available
Skin corrosion/irritation
no data available
Serious eye damage/eye irritation
no data available
Respiratory or skin sensitisation
no data available
Germ cell mutagenicity
no data available
Carcinogenicity
IARC:
No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:
No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:
No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:
No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity
no data available
no data available
Specific target organ toxicity -single exposure
no data available
Specific target organ toxicity -repeated exposure
no data available
Aspiration hazard
no data available
Additional Information
RTECS: Not available

SECTION 12. ECOLOGICAL INFORMATION

Toxicity
no data available
Persistence and degradability
no data available
Bioaccumulative potential
no data available
Mobility in soil
no data available

Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical
safety assessment not required/not conducted
Other adverse effects
no data available

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods
Product
Offer surplus and non-recyclable solutions to a
licensed disposal company.
Contaminated packaging
Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods
IMDG
Not dangerous goods
IATA
Not dangerous goods

SECTION 15. REGULATORY INFORMATION

SARA 302 Components
SARA 302: No chemicals in this material are subject
to the reporting requirements of SARA Title III,
Section 302.
SARA 313 Components
SARA 313: This material does not contain any
chemical components with known CAS numbers that
exceed the threshold (De Minimis) reporting levels
established by SARA Title III, Section 313.
SARA 311/312 Hazards
No SARA Hazards
Massachusetts Right To Know Components
No components are subject to the Massachusetts
Right to Know Act.
Pennsylvania Right To Know Components
Dibismuth dititanium heptaoxide
CAS-No.
12048-51-0
New Jersey Right To Know Components
Dibismuth dititanium heptaoxide
CAS-No.
12048-51-0

California Prop. 65 Components

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

16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.

Research

- A novel method for the preparation of Bi₂Ti₂O₇ pyrochlore. Jiankun Ren, Guoqing Liu, Yuping Wang, Qian Shi. Materials Letters, Volume 76, 1 June 2012, Pages 184-186.
- Preparation of novel flower-like BiVO₄/Bi₂Ti₂O₇/Fe₃O₄ for simultaneous removal of tetracycline and Cu²⁺: Adsorption and photocatalytic mechanisms. Dadao Wang, Jian Li, Zhifeng Xu, Yeran Zhu, Guoxin Chen. Journal of Colloid and Interface Science, Volume 533, 1 January 2019, Pages 344-357.
- Structure and properties of Bi₂Ti₂O₇ pyrochlore type phase stabilized by lithium. Jerome Lelievre, Pascal Marchet. Journal of Alloys and Compounds, Volume 732, 25 January 2018, Pages 178-186.
- Bi₂Ti₂O₇ nanoparticles: An oxide based upconversion luminescence host by a simple sol-gel route. Jindou Shi, Wanyin Ge, Meimei Xu, Jianfeng Zhu. Journal of Luminescence, Volume 213, September 2019, Pages 15-18.
- Photocatalytic property of bismuth titanate Bi₂Ti₂O₇. Wei F. Yao, Hong Wang, Xiao H. Xu, Jing T. Zhou, Shu X. Shang. Applied Catalysis A: General, Volume 259, Issue 1, 8 March 2004, Pages 29-33.
- Bismuth titanate-based UV filters embedded mesoporous silica nanoparticles: Role of bismuth concentration in the self-sealing process. Gloria Zaccariello, Michele Back, Alvise Benedetti, Patrizia

Canton, Pietro Riello. Journal of Colloid and Interface Science, Volume 549, 1 August 2019, Pages 1-8.

- Catalytic activity of Bismuth Titanate. A. Padmanaban, T. Dhanasekaran, S. Praveen Kumar, G. Gnanamoorthy, V. Narayanan. Materials Today: Proceedings, Volume 14, Part 2, 2019, Pages 553-557.
- Bandgap engineered (tin & carbon co-doped) bismuth titanate nanowires for improved visible-light assisted photocatalytic application. R. Saai Harini, D. Easwaramoorthy, V. Sai Muthukumar, R. Gowrishankar, S. Anandan. Environmental Nanotechnology, Monitoring & Management, Volume 12, December 2019, Article 100228.
- Optimization of hydrothermal synthesis of Bismuth titanate nanoparticles and application for photocatalytic degradation of Tetracycline. Sara Khodadoost, Alireza Hadi, Javad Karimi-Sabet, Mohsen Mehdipourghazi, AbooAli Golzary. Journal of Environmental Chemical Engineering, Volume 5, Issue 6, December 2017, Pages 5369-5380.