

Sodium Titanate	Pricing >
Sodium Titanate Nanotubes	Pricing >
Linear Formula	TiO ₂ •Na ₂ O
Pubchem CID	160970
MDL Number	N/A
EC No.	234-802-9
IUPAC Name	disodium; oxygen(2-); titanium(4+)
Beilstein/Reaxys No.	N/A
SMILES	[Na+].[Na+].[Ti+4].[O-2].[O-2].[O-2]
Inchl Identifier	InChI=1S/2Na.3O.Ti/q2*+1;3*-2;+4
Inchl Key	LJUBBLNHYXJKSN-UHFFFAOYSA-N
Signal Word	N/A
Hazard Statements	N/A
Hazard Codes	N/A
Risk Codes	N/A
Safety Statements	N/A
Transport Information	NONH for all modes of transport

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SAFETY DATA SHEET

Date Accessed: 04/20/2024

Date Revised: 01/15/2022

SECTION 1. IDENTIFICATION

Product Identifiers: All applicable American Elements product codes for CAS #12034-34-3

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:
Domestic, North America +1 800-424-9300
International +1 703-527-3887

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

Chemical characterization : Product does not burn
Formula: Na_2TiO_3
Molecular Weight: 141.84 g/mol
No ingredients are hazardous according to OSHA criteria.
No components need to be disclosed according to the applicable regulations.

SECTION 4. 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

Suitable extinguishing media

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

Special hazards arising from the substance or mixture

Sodium oxides, Titanium/titanium 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.

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

Appearance Form: solid

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 3.4 g/mL at 25 °C (77 °F)

Water solubility no data available

Partition coefficient: 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
Other safety information
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
Lithium, Sodium/sodium oxides, Potassium,
Magnesium, Zinc, Aluminum, Calcium
Hazardous decomposition products
Other decomposition products - no data available
In the event of fire: see section 5

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity
no data available
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

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

Disodium Titanium Trioxide

CAS-No. 12034-34-3

Revision Date

New Jersey Right To Know Components

Disodium Titanium Trioxide

CAS-No. 12034-34-3

Revision Date

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

- Photocatalytic conversion of CO₂ to hydrocarbon fuel using carbon and nitrogen co-doped sodium titanate nanotubes. Parayil SK, Razzaq A, Park SM, Kim HR, Grimes CA, In SI. *Applied Catalysis A: General*. 2015 Jun 5;498:205-13.
- Photoelectrochemical Activity of Sodium Titanate Nanobelts for Photoanode. Kim DK, Cho ES, Kim CW, Kang MJ, Kim TW, Kang YS. *J Nanosci Nanotechnol*. 2015 Feb;15(2):1632-5.
- Structural, vibrational, and thermodynamic properties of γ -Na₂TiO₃: Meng F, Liu Y, Wang L, Chen D, Zhao H, Wang W, Qi T. First-principles and experimental studies. *Ceramics International*. 2018 Feb 1;44(2):2065-73.
- Evaluation of Na₂TiO₃ formation for producing crystalline BaTiO₃ nanoparticles by liquid–solid–solution process at low temperature. Han W, Lee HS, Yoo B, Park HH. *Journal of Alloys and Compounds*. 2017 Feb 25;695:2160-4.
- Study on the transformation from NaCl-type Na₂TiO₃ to layered titanate. Y. H. Liu, W. Zhao, W. J. Wang, X. Yang, C. R. Wang. *Journal of Physics and Chemistry of Solids*, Volume 73, Issue 3, March 2012, Pages 402-406.
- Absorption red shift and structural phase transition in nanocrystalline Bi₄Ti₃O₁₂-Na₂TiO₃ solid solution. A. Q. Jiang, G. H. Li, L. D. Zhang. *Solid State Communications*, Volume 104, Issue 11, December 1997, Pages 709-711.
- Electrospun sodium titanate fibres for fast and selective water purification. Santala E, Koivula R, Harjula R, Ritala M. *Environ Technol*. 2018 Jun 4:1-7.
- Bioactivity of periodontal ligament stem cells on sodium titanate coated with graphene oxide. Zhou Q, Yang P, Li X, Liu H, Ge S. *Sci Rep*. 2016 Jan 14;6:19343.
- A tightly integrated sodium titanate-carbon composite as an anode material for rechargeable sodium ion batteries. Yan Z, Liu L, Shu H, Yang X, Wang H, Tan J, Zhou Q, Huang Z, Wang X. *Journal of Power Sources*. 2015 Jan 15;274:8-14.
- Synergistic effects of CdS in sodium titanate based nanostructures for hydrogen evolution. Fei Wang, Zigui Kan, Fei Cao, Qi Guo, Caolong Li. *Chinese Chemical Letters*, Volume 29, Issue 9, September 2018, Pages 1417-1420.