

<a href="#">Potassium Titanate Anhydrous</a>		<a href="#">Pricing &gt;</a>
Linear Formula	K <sub>2</sub> O•TiO <sub>2</sub>	
Pubchem CID	159403	
MDL Number	N/A	
EC No.	234-748-6	
IUPAC Name	dipotassium; oxygen(2-); titanium(4+)	
Beilstein/Reaxys No.	N/A	
SMILES	[K+].[K+].[Ti+4].[O-2].[O-2].[O-2]	
InChI Identifier	InChI=1S/2K.3O.Ti/q2*+1;3*-2;+4	
InChI Key	KEWYKJOOCFOYTD-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	

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## SAFETY DATA SHEET

Date Accessed: 04/28/2024

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### SECTION 1. IDENTIFICATION

**Product Identifiers:** All applicable American Elements product codes for CAS #12030-97-6

**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  
Classification according to Regulation (EC) No 1272/2008  
The substance is not classified as hazardous to health or the environment according to the CLP regulation.  
Classification according to Directive 67/548/EEC or Directive 1999/45/EC  
N/A  
Information concerning particular hazards for human and environment:  
No data available  
Hazards not otherwise classified  
No data available  
Label elements  
Labelling according to Regulation (EC) No 1272/2008  
N/A  
Hazard pictograms  
N/A  
Signal word  
N/A  
Hazard statements  
N/A  
WHMIS classification  
Not controlled  
Classification system  
HMIS ratings (scale 0-4)  
(Hazardous Materials Identification System)  
HEALTH  
FIRE  
REACTIVITY  
1  
0  
0  
Health (acute effects) = 1  
Flammability = 0  
Physical Hazard = 0  
Other hazards  
Results of PBT and vPvB assessment  
PBT:  
N/A  
vPvB:  
N/A

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## **SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substances  
CAS No. / Substance Name:  
12030-97-6 Potassium titanium oxide (potassium titanate)  
Identification number(s):  
EC number:  
234-748-6

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## **SECTION 4. FIRST AID MEASURES**

Description of first aid measures

If inhaled:

Supply patient with fresh air. If not breathing, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

In case of skin contact:

Immediately wash with soap and water; rinse thoroughly.

Seek immediate medical advice.

In case of eye contact:

Rinse opened eye for several minutes under running water. Consult a physician.

If swallowed:

Seek medical treatment.

Information for doctor

Most important symptoms and effects, both acute and delayed

No data available

Indication of any immediate medical attention and special treatment needed

No data available

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## **SECTION 5. FIREFIGHTING MEASURES**

Extinguishing media

Suitable extinguishing agents

Product is not flammable. Use fire-fighting measures that suit the surrounding fire.

Special hazards arising from the substance or mixture

If this product is involved in a fire, the following can be released:

Potassium oxide

Titanium oxides

Advice for firefighters

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

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## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Environmental precautions:

Do not allow product to enter drains, sewage systems, or other water courses.

Do not allow material to penetrate the ground or soil.

Methods and materials for containment and cleanup:

Pick up mechanically.

Prevention of secondary hazards:

No special measures required.

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.

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## **SECTION 7. HANDLING AND STORAGE**

Handling

Precautions for safe handling

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Information about protection against explosions and fires:

The product is not flammable

Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms and receptacles:

No special requirements.

Information about storage in one common storage facility:

Store away from alkali metals.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well-sealed containers.

Specific end use(s)

No data available

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## **SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face

velocity of at least 100 feet per minute.  
Control parameters  
Components with limit values that require monitoring at the workplace:  
The product does not contain any relevant quantities of materials with critical values that should be monitored at the workplace.  
Additional information:  
No data  
Exposure controls  
Personal protective equipment  
Follow typical protective and hygienic practices for handling chemicals.  
Keep away from foodstuffs, beverages and feed.  
Remove all soiled and contaminated clothing immediately.  
Wash hands before breaks and at the end of work.  
Maintain an ergonomically appropriate working environment.  
Breathing equipment:  
Use suitable respirator when high concentrations are present.  
Recommended filter device for short term use:  
Use a respirator with type N95 (USA) or PE (EN 143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.  
Protection of hands:  
Impervious gloves  
Inspect gloves prior to use.  
Suitability of gloves should be determined both by material and quality, the latter of which may vary by manufacturer.  
Material of gloves  
Nitrile rubber, NBR  
Eye protection:  
Safety glasses  
Body protection:  
Protective work clothing

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## **SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Information on basic physical and chemical properties  
Appearance:  
Form: Powder  
Color: White to off-white  
Odor: Odorless  
Odor threshold: No data available.  
pH: N/A  
Melting point/Melting range: 1615 °C (2939 °F)

Boiling point/Boiling range: No data available  
Sublimation temperature / start: No data available  
Flammability (solid, gas)  
No data available.  
Ignition temperature: No data available  
Decomposition temperature: No data available  
Autoignition: No data available.  
Danger of explosion: No data available.  
Explosion limits:  
Lower: No data available  
Upper: No data available  
Vapor pressure: N/A  
Density: No data available  
Relative density  
No data available.  
Vapor density  
N/A  
Evaporation rate  
N/A  
Solubility in Water (H<sub>2</sub>O): Insoluble  
Partition coefficient (n-octanol/water): No data available.  
Viscosity:  
Dynamic: N/A  
Kinematic: N/A  
Other information  
No data available

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## **SECTION 10. STABILITY AND REACTIVITY**

Reactivity  
No data available  
Chemical stability  
Stable under recommended storage conditions.  
Thermal decomposition / conditions to be avoided:  
Decomposition will not occur if used and stored according to specifications.  
Possibility of hazardous reactions  
No dangerous reactions known  
Conditions to avoid  
No data available  
Incompatible materials:  
Alkali metals  
Hazardous decomposition products:  
Potassium oxide  
Titanium oxides

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## **SECTION 11. TOXICOLOGICAL INFORMATION**

Information on toxicological effects

Acute toxicity:  
No effects known.  
LD/LC50 values that are relevant for classification:  
No data  
Skin irritation or corrosion:  
May cause irritation  
Eye irritation or corrosion:  
May cause irritation  
Sensitization:  
No sensitizing effects known.  
Germ cell mutagenicity:  
No effects known.  
Carcinogenicity:  
No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.  
Reproductive toxicity:  
No effects known.  
Specific target organ system toxicity - repeated exposure:  
No effects known.  
Specific target organ system toxicity - single exposure:  
No effects known.  
Aspiration hazard:  
No effects known.  
Subacute to chronic toxicity:  
No effects known.  
Additional toxicological information:  
To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

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## **SECTION 12. ECOLOGICAL INFORMATION**

Toxicity  
Aquatic toxicity:  
No data available  
Persistence and degradability  
No data available  
Bioaccumulative potential  
No data available  
Mobility in soil  
No data available  
Additional ecological information:  
Avoid transfer into the environment.  
Results of PBT and vPvB assessment  
PBT:  
N/A  
vPvB:  
N/A  
Other adverse effects  
No data available

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## **SECTION 13. DISPOSAL CONSIDERATIONS**

Waste treatment methods

Recommendation

Consult official regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation:

Disposal must be made according to official regulations.

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## **SECTION 14. TRANSPORT INFORMATION**

UN-Number

DOT, ADN, IMDG, IATA

N/A

UN proper shipping name

DOT, ADN, IMDG, IATA

N/A

Transport hazard class(es)

DOT, ADR, ADN, IMDG, IATA

Class

N/A

Packing group

DOT, IMDG, IATA

N/A

Environmental hazards: N/A

Special precautions for user

N/A

Transport in bulk according to Annex II of  
MARPOL73/78 and the IBC Code

N/A

Transport/Additional information: DOT

Marine Pollutant (DOT): No

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## **SECTION 15. REGULATORY INFORMATION**

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

National regulations

All components of this product are listed in the U.S.  
Environmental Protection Agency Toxic Substances  
Control Act Chemical substance Inventory.

All components of this product are listed on the  
Canadian Domestic Substances List (DSL).

SARA Section 313 (specific toxic chemical listings)

Substance is not listed.

California Proposition 65



Prop 65 - Chemicals known to cause cancer  
Substance is not listed.  
Prop 65 - Developmental toxicity  
Substance is not listed.  
Prop 65 - Developmental toxicity, female  
Substance is not listed.  
Prop 65 - Developmental toxicity, male  
Substance is not listed.  
Information about limitation of use:  
For use only by technically qualified individuals.  
Other regulations, limitations and prohibitive  
regulations  
Substance of Very High Concern (SVHC) according to  
the REACH Regulations (EC) No. 1907/2006.  
Substance is not listed.  
The conditions of restrictions according to Article 67  
and Annex XVII of the Regulation (EC) No 1907/2006  
(REACH) for the manufacturing, placing on the market  
and use must be observed.  
Substance is not listed.  
Annex XIV of the REACH Regulations (requiring  
Authorisation for use)  
Substance is not listed.  
REACH - Pre-registered substances  
Substance is listed.  
Chemical safety assessment:  
A Chemical Safety Assessment has not been carried  
out.

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## **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.

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## Research

- Potassium titanate nanowires: Structure, growth, and optical properties. Du GH, Chen Q, Han PD, Yu Y, Peng LM. *Physical Review B*. 2003 Jan 30;67(3):035323.
- Ultrafine potassium titanate nanowires: a new Ti-based anode for sodium ion batteries. Zhang Q, Guo Y, Guo K, Zhai T, Li H. *Chem Commun (Camb)*. 2016 May 7;52(37):6229-32. doi: 10.1039/c6cc01057a.
- Preparation and tribological properties of potassium titanate-Ti<sub>3</sub>C<sub>2</sub>Tx nanocomposites as additives in base oil. Xuefeng Zhang, Yu Guo, Yijia Li, Yong Liu, Shangli Dong. *Chinese Chemical Letters*, Volume 30, Issue 2, February 2019, Pages 502-504.
- Potassium titanate for the production of biodiesel. D. Salinas, S. Guerrero, A. Cross, P. Araya, E. E. Wolf. *Fuel*, Volume 166, 15 February 2016, Pages 237-244.
- Large-scale synthesis of sodium and potassium titanate nanobelts. Sun X, Chen X, Li Y. *Inorganic chemistry*. 2002 Oct 7;41(20):4996-8.
- Ti<sub>3</sub>C<sub>2</sub> MXene-derived sodium/potassium titanate nanoribbons for high-performance sodium/potassium ion batteries with enhanced capacities. Dong Y, Wu ZS, Zheng S, Wang X, Qin J, Wang S, Shi X, Bao X. *ACS Nano*. 2017 May 5;11(5):4792-800.
- Potassium titanate as heterogeneous catalyst for methyl transesterification. Edgar Andrés Zúñiga González, M. García-Guaderrama, Mariela Rojas Villalobos, Fernando López Dellamary, Gregorio Guadalupe Carbajal Arizaga. *Powder Technology*, Volume 280, August 2015, Pages 201-206.
- The Room-Temperature Chemiresistive Properties of Potassium Titanate Whiskers versus Organic Vapors. Varezchnikov AS, Fedorov FS, Burmistrov IN, Plugin IA, Sommer M, Lashkov AV, Gorokhovskiy AV, Nasibulin AG, Kuznetsov DV, Gorshenkov MV, Sysoev VV. *Nanomaterials (Basel)*. 2017 Dec 19;7(12).
- A novel route for synthesis of UV-resistant hydrophobic titania-containing silica aerogels by using potassium titanate as precursor. Wei W, Lü X, Jiang D, Yan Z, Chen M, Xie J. *Dalton Trans*. 2014 Jul 7;43(25):9456-67.
- Exfoliation of one-dimensional TiO<sub>5</sub> chain in K<sub>2</sub>TiO<sub>3</sub>. Masubuchi Y, Miyazaki R, Kikuchi H, Motohashi T, Kikkawa S. *Dalton Trans*. 2014 Sep 28;43(36):13751-5.