

SAFETY DATA SHEET

Date Printed: 05/12/2024

Date Revised: 01/15/2022

SECTION 1. IDENTIFICATION

Product Identifier: (5N) 99.999% Iron(III) tert-Butoxide

Product Code: FE3-TBOX-05-C

CAS Number: 620945-29-1

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:
+1 800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

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

Flammable solids, Category 2 H228

Skin corrosion/irritation, Category 2 H315

Serious eye damage/eye irritation, Category 2 H319

Specific target organ toxicity — Single exposure, Category 3,

Respiratory tract irritation

H335

Adverse physicochemical, human health and environmental effects

No additional information available

Signal Word: Warning



Hazard statements (CLP) : H228 - Flammable solid.

H315 - Causes skin irritation.

H319 - Causes serious eye irritation.

H335 - May cause respiratory irritation.

Precautionary statements (CLP) :

P280 - Wear protective gloves/protective clothing/eye protection/face protection.

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No

smoking.

P240 - Ground and bond container and receiving equipment.

P261 - Avoid breathing dust.

P264 - Wash hands thoroughly after handling.

P312 - Call a doctor if you feel unwell.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance type : Mono-constituent

Name : IRON(III) t-BUTOXIDE

CAS-No. : 620945-29-1

SECTION 4. FIRST AID MEASURES

First-aid measures general : Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek

medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact : Wash with plenty of water/.... Get medical advice/attention.

First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.

First-aid measures after ingestion : Never give anything by mouth to an unconscious person. Get medical advice/attention

Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation : May cause respiratory irritation.

Symptoms/effects after skin contact : Causes skin irritation.

Symptoms/effects after eye contact : Causes serious eye irritation.

Symptoms/effects after ingestion : No information available

SECTION 5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media : Water spray. Water fog. Foam. Carbon dioxide. Dry chemical.

Unsuitable extinguishing media : Do not use straight streams.

Special hazards arising from the substance or mixture

Fire hazard : Flammable solid. Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

Advice for firefighters

Firefighting instructions : Exercise caution when fighting any chemical fire. Use water spray or fog for cooling exposed containers.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

Avoid contact with skin and eyes. Do not breathe dust.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

General measures : Eliminate ignition sources. Use special care to avoid static electric charges.

For non-emergency personnel

Protective equipment : Wear protective equipment as described in Section 8.

Emergency procedures : Evacuate unnecessary personnel.

For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".

Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters.

Methods and material for containment and cleaning up

For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for cleaning up : Sweep or shovel spills into appropriate container for disposal. Use only non-sparking tools.

Reference to other sections

See Heading 8. Exposure controls and personal protection

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

Additional hazards when processed : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Precautions for safe handling : Avoid contact with skin and eyes. Ground/bond container and receiving equipment. Use only

non-sparking tools. Do not breathe dust. Use only outdoors or in a well-ventilated area.

Hygiene measures : Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild

soap and water before eating, drinking or smoking and when leaving work.

Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed. Keep in a cool place. Store locked up.

Incompatible materials : Strong oxidizing agents.

Storage area : Store in a well-ventilated place. Store away from heat.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Appropriate engineering controls:

Provide local exhaust or general room ventilation.

Personal protective equipment:

Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Hand protection:

Neoprene or nitrile rubber gloves

Eye protection:

Chemical goggles. Contact lenses should not be worn

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified combination organic vapor (black cartridge) respirator with dust prefilter.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state : Solid

Appearance : Solid.

Molecular mass : 275.19 g/mol

Colour : Brown.

Odour : Odourless.

Odour threshold : No data available

Refractive index : No additional information available

pH : No data available

Relative evaporation rate (butylacetate=1) : No data available

Melting point : No data available

Freezing point : No data available

Boiling point : 136 °C @ 0.1 mm Hg

Flash point : No data available

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Flammability (solid, gas) : Flammable solid.

Vapour pressure : < 0.05 mm Hg @ 25°C

Relative vapour density at 20 °C : > 1

Relative density : 0.881

Solubility : Reacts slowly with moisture/water.

Organic solvent: Toluene, Hexane, THF, Isopropanol

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

Oxidising properties : No data available

Explosive limits : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity

No additional information available

Chemical stability

Stable in sealed containers stored under an inert atmosphere.

Possibility of hazardous reactions

Material decomposes slowly in contact with moist air and rapidly in contact with water liberating t-butanol.

Conditions to avoid

Heat. Open flame. Sparks.

Incompatible materials

Strong oxidizing agents.

Hazardous decomposition products

Butenes. t-Butanol. Organic acid vapors. Iron oxide fumes.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity : Not classified

Skin corrosion/irritation : Causes skin irritation.

Serious eye damage/irritation : Causes serious eye irritation.

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

None of the components in this product at concentrations >0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

Reproductive toxicity : Not classified

STOT-single exposure : May cause respiratory irritation.

STOT-repeated exposure : Not classified

Aspiration hazard : Not classified

Potential adverse human health effects and

symptoms

: This compound liberates t-butanol on contact with moisture. Material generates t-butanol on contact with water or moisture in skin, eyes and mucous membranes and has an irritating, dehydrating effect on overexposed tissue.

Symptoms/effects after inhalation : May cause respiratory irritation.

Symptoms/effects after skin contact : Causes skin irritation.

Symptoms/effects after eye contact : Causes serious eye irritation.

Symptoms/effects after ingestion : No information available.

Reason for classification : Expert judgment

SECTION 12. ECOLOGICAL INFORMATION

Toxicity

Hazardous to the aquatic environment, shortterm (acute): Not classified

Hazardous to the aquatic environment, longterm (chronic): Not classified

Persistence and degradability

No additional information available

Bioaccumulative potential

No additional information available

Mobility in soil

No additional information available

Results of PBT and vPvB assessment

No additional information available

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Sewage disposal recommendations : Do not dispose of waste into sewer.

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility..

Ecology - waste materials : Avoid release to the environment.

SECTION 14. TRANSPORT INFORMATION

UN number

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

UN number

UN-No. (ADR) : 1325

UN-No. (IMDG) : 1325

UN-No. (IATA) : 1325

UN-No. (ADN) : 1325

UN-No. (RID) : 1325

UN proper shipping name

Proper Shipping Name (ADR) : FLAMMABLE SOLID, ORGANIC, N.O.S.

Proper Shipping Name (IMDG) : FLAMMABLE SOLID, ORGANIC, N.O.S.

Proper Shipping Name (IATA) : Flammable solid, organic, n.o.s.

Proper Shipping Name (ADN) : FLAMMABLE SOLID, ORGANIC, N.O.S.

Proper Shipping Name (RID) : FLAMMABLE SOLID, ORGANIC, N.O.S.

Transport document description (ADR) : UN 1325 FLAMMABLE SOLID, ORGANIC, N.O.S. (IRON(III) t-BUTOXIDE), 4.1, III, (E)

Transport document description (IMDG) : UN 1325 FLAMMABLE SOLID, ORGANIC, N.O.S. (IRON(III) t-BUTOXIDE), 4.1, III

Transport document description (IATA) : UN 1325 Flammable solid, organic, n.o.s. (IRON(III) t-BUTOXIDE), 4.1, III

Transport document description (ADN) : UN 1325 FLAMMABLE SOLID, ORGANIC, N.O.S. (IRON(III) t-BUTOXIDE), 4.1, III

Transport document description (RID) : UN 1325 FLAMMABLE SOLID, ORGANIC, N.O.S. (IRON(III) t-BUTOXIDE), 4.1, III

ADR

Transport hazard class(es) (ADR) : 4.1

Danger labels (ADR) : 4.1

:

IMDG

Transport hazard class(es) (IMDG) : 4.1

Danger labels (IMDG) : 4.1

:

IATA

Transport hazard class(es) (IATA) : 4.1

Danger labels (IATA) : 4.1

:

ADN

Transport hazard class(es) (ADN) : 4.1

Danger labels (ADN) : 4.1

:

RID

Transport hazard class(es) (RID) : 4.1

Danger labels (RID) : 4.1

Packing group (ADR) : III

Packing group (IMDG) : III

Packing group (IATA) : III

Packing group (ADN) : III

SECTION 15. REGULATORY INFORMATION

EU-Regulations

No REACH Annex XVII restrictions

IRON(III) t-BUTOXIDE is not on the REACH Candidate List

IRON(III) t-BUTOXIDE is not on the REACH Annex XIV List

IRON(III) t-BUTOXIDE is not subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

IRON(III) t-BUTOXIDE is not subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

National regulations

Germany

12th Ordinance Implementing the Federal

Immission Control Act - 12.BImSchV

: Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

SZW-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting

giftige stoffen – Borstvoeding

: The substance is not listed

NIET-limitatieve lijst van voor de voortplanting

giftige stoffen – Vruchtbaarheid

: The substance is not listed

NIET-limitatieve lijst van voor de voortplanting

giftige stoffen – Ontwikkeling

: The substance is not listed

Denmark

Danish National Regulations : Young people below the age of 18 years are not allowed to use the product

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.