



SAFETY DATA SHEET

Revision Date: 17.07.2012
MSDS_EU/ANSI/EN/150000101107/Version 1.0

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product identifier

| | |
|----------------------------------|---|
| Product Name | FutureSol (TM) TBM |
| Product Identification Number(s) | 70183, E701830S |
| MSDS Prepared by | Product Safety and Health |
| Chemical Name | Butane, 1,1',1''-[methyldynetr(oxy)]tris- |
| Synonym(s) | Tributoxymethane |
| Molecular Formula | C13H28O3 |
| Molecular Weight | 232.36 |
| Product Use | solvent |

Relevant identified uses of the substance or mixture and uses advised against

| | |
|----------------------|----------|
| Identified uses | solvent |
| Uses advised against | No data. |

Details of the supplier of the safety data sheet

Manufacturer/Supplier FutureFuel Chemical Company
Gap Road 2800
Batesville, AR 72503
US
E-mail address: ProductSafety@ffcmail.com

For product information telephone FutureFuel Chemical Company 870-698-3000, 8:00 am - 4:00 pm, Central.

Emergency telephone CHEMTREC: US 800-424-9300, international 703-527-3887

SECTION 2: HAZARDS IDENTIFICATION

Classification according to EU Directives 67/548/EEC or 1999/45/EC

R-Phrases

not hazardous

S Phrases

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Classification according to Regulation (EU) 1272/2008 with the correlation table 67/548/EEC or 1999/45/EC (Annex VII of CLP)

GHS Classification

Not classified as a dangerous substance according to Regulation (EU)1272/2008.

SECTION 3: COMPOSITION INFORMATION ON INGREDIENTS

(Typical composition is given, and it may vary. A certificate of analysis can be provided, if available.)

| <u>Weight %</u> | <u>Component</u> | <u>EC-No.</u> | <u>CAS Registry No.</u> | <u>Symbol(s)</u> | <u>Risk code</u> |
|-----------------|------------------|---------------|-------------------------|------------------|------------------|
| 100% | tributoxymethane | 209-618-7 | 588-43-2 | | |

SECTION 4: FIRST-AID MEASURES

Description of first aid measures

Inhalation: If symptomatic, move to fresh air. Get medical attention if symptoms persist.

Eyes: Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. Get medical attention if symptoms persist.

Skin: Wash with soap and water. Get medical attention if symptoms occur.

Ingestion: Seek medical advice.

Most important symptoms and effects, both acute and delayed

No information available.

Indication of any immediate medical attention and special treatment needed

No information available. The first aid procedure should be established in consultation with the doctor responsible for industrial medicine.

SECTION 5: FIRE FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media Water spray, dry chemical, foam, carbon dioxide

Unsuitable extinguishing media No Restrictions.

Special hazards arising from the substance or mixture

Hazardous Combustion Products: carbon dioxide, carbon monoxide

Unusual Fire and Explosion Hazards: Combustible. Elevated temperatures can cause decomposition.

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Advice for firefighters

Special protective actions for fire-fighters USE WATER WITH CAUTION. Material will float and may ignite on surface of water. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters Wear self-contained breathing apparatus and protective clothing.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

WEAR PERSONAL PROTECTIVE EQUIPMENT.

Environmental precautions

Should not be released into the environment.

Methods and materials for containment and cleaning up

Absorb spill with vermiculite or other inert material, then place in a container for chemical waste.

Reference to other sections

Flush spill area with water spray. Prevent runoff from entering drains, sewers, or streams. Dike for later disposal.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Personal Precautionary Measures: No special precautionary health measures should be needed under anticipated conditions of use.

Prevention of Fire and Explosion: Keep away from heat and flame. Keep from contact with oxidizing materials. Exercise caution if heating, especially in a closed container.

Conditions for safe storage, including any incompatibilities

Storage: Keep container closed. Store in a cool place.

Specific end uses

solvent

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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Control parameters

no data available

Exposure controls

Country specific exposure limits have not been established or are not applicable unless listed below.

Ventilation: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Respiratory Protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Respirator type: Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister. Contact health and safety professional or manufacturer for specific information.

Eye Protection: It is a good industrial hygiene practice to minimize eye contact.

Skin Protection: It is a good industrial hygiene practice to minimize skin contact.

Recommended Decontamination Facilities: eye bath, washing facilities

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance

| | |
|---|-------------------------|
| Physical Form: | liquid |
| Color: | colorless |
| Odor: | slight |
| Odor Threshold | not available |
| pH: | not available |
| Freezing Point: | not available |
| Boiling Point: | 120 - 122 °C |
| Flash Point | 89 °C |
| Evaporation Rate: | not available |
| Flammability (solid, gas) | |
| Upper Flammable Limit | not available |
| Lower Flammable Limit | not available |
| Vapor Pressure | not available |
| Vapor Density | not available |
| Specific Gravity: | 0.872 (20 °C) |
| Solubility | |
| Solubility in Water: | not available |
| SolubilityOther | not available |
| Partition coefficient (n-octanol/water) | not available |
| Autoignition Temperature | not available |
| Decomposition temperature | 316.77 °C ; 310.2 (DSC) |

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| | |
|----------------------|-----------------|
| Viscosity: | not available |
| Explosive properties | Not classified. |
| Oxidizing properties | Not classified. |

SECTION 10: STABILITY AND REACTIVITY

Reactivity

None known.

Chemical stability

Stable; however, material can decompose at elevated temperatures. Use caution when storing or processing material above 146 °C.

Possibility of hazardous reactions

Will not occur.

Conditions to avoid

no data available

Incompatible materials

Material reacts with strong oxidizing agents.

Hazardous decomposition products

carbon monoxide, carbon dioxide

SECTION 11: TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity

Acute toxicity data, if available, are listed below. Additional toxicity data may be available on request.

| | |
|----------------------------------|---------------|
| LD50(rat) | 6,873 mg/kg |
| LD50 (rat) | > 2,000 mg/kg |
| Skin Irritation (rabbit) | none |
| Eye Irritation (rabbit) | none |
| Skin Sensitization: (guinea pig) | none |

Skin corrosion/irritation

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(rabbit,): none

Serious eye damage/eye irritation

(rabbit,): none

Respiratory or skin sensitization

(guinea pig): none

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT - single exposure

no data available

STOT - repeated exposure

no data available

Aspiration hazard

no data available

SECTION 12: ECOLOGICAL INFORMATION

Acute toxicity data, if available, are listed below. Additional toxicity data may be available on request.

Toxicity

Persistence and degradability

no data available

Bioaccumulative potential

no data available

Mobility in soil

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no data available

Results of PBT and vPvB assessment

no data available

Other adverse effects

We have no quantitative data concerning the ecological effects of this product.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Discharge, treatment, or disposal may be subject to national, state, or local laws. Incinerate. Since emptied containers retain product residue, follow label warnings even after container is emptied.

SECTION 14: TRANSPORT INFORMATION

ADR/RID:

Class not regulated

Sea - IMDG (International Maritime Dangerous Goods)

Class not regulated

Air - ICAO (International Civil Aviation Organization)

Class not regulated

Environmental hazards

not regulated

Special precautions for user

No special precautions required.

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Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

Important Note: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Consult your company's Hazardous Materials/Dangerous Goods expert for information specific to your situation.

SECTION 15: REGULATORY INFORMATION

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

Carcinogenicity Classification (components present at 0.1% or more): none, unless listed below

TSCA (US Toxic Substances Control Act): All components of this product are listed on the TSCA inventory. Any impurities present in this product are exempt from listing.

EINECS (European Inventory of Existing Commercial Chemical Substances): All components of this product are listed on EINECS.

AICS / NICNAS (Australian Inventory of Chemical Substances and National Industrial Chemicals Notification and Assessment Scheme): One or more components of this product are not listed on AICS. In Australia, its use is restricted to research and development purposes only.

MITI (Japanese Handbook of Existing and New Chemical Substances): This product is not listed in the Handbook. In Japan, its use is restricted to research and development purposes only.

ECL (Korean Toxic Substances Control Act): This product is not listed on the Korean inventory. In Korea, its use is restricted to research and development purposes only.

Philippines Inventory (PICCS): One or more components of this product are not listed on the Philippine inventory. In the Philippines, commercial industrial use is restricted to lawful food, drug, or cosmetic applications. Other uses are restricted to research and development purposes only.

Inventory of Existing Chemical Substances in China: One or more components of this product are not listed on the Inventory of Existing Chemical Substances in China (IECSC).

Chemical Safety Assessment

no data available

SECTION 16: OTHER INFORMATION

The information contained herein is based on current knowledge and experience; no responsibility is accepted that the information is sufficient or correct in all cases. Users should consider these data only as a supplement to other information. Users should make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials, the safety and health of employees and customers, and the protection of the environment.
