Boron Trifluoride Tetrahydrofuran Complex	Pricing >

Linear Formula	BF_3• THF
Pubchem CID	71088
MDL Number	MFCD00040372
EC No.	207-325-9
IUPAC Name	oxolane; trifluoroborane
Beilstein/Reaxys No.	N/A
SMILES	FB(F)F.O1CCCC1
Inchl Identifier	InChI=1S/C4H8O.BF3/c1-2-4-5-3-1;2-1(3)4/h1-4H2;
Inchl Key	CHNLPLHJUPMEOI-UHFFFAOYSA-N

Signal Word	Danger
Hazard Statements	H314
Hazard Codes	C
Precautionary Statements	P280-P303 + P361 + P353-P304 + P340 + P310-P305 + P351 + P338
Flash Point	197.6 °F 92 °C
Risk Codes	34
Safety Statements	26-27-36/37/39-45
RTECS Number	N/A
Transport Information	UN 3265 8/PG 2
WGK Germany	2
GHS Pictograms	**GHS05 Corrosive** 

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SAFETY DATA SHEET

Date Accessed: 04/24/2024
Date Revised: 01/15/2022

SECTION 1. IDENTIFICATION

Product Identifiers: All applicable American Elements product codes for CAS #462-34-0

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

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)
GHS08 Health hazard
STOT RE 1
H372 Causes damage to the kidneys through prolonged or repeated exposure. Route of exposure: Inhalative.
GHS05 Corrosion
Skin Corr. 1B H314 Causes severe skin burns and eye damage.
Eye Dam. 1
H318 Causes serious eye damage.
GHS07
Acute Tox. 4 H332 Harmful if inhaled.
H227 Combustible liquid.
Hazards not otherwise classified
No data available
GHS label elements
GHS label elements, including precautionary statements
Hazard pictograms

GHS05 GHS07 GHS08
Signal word
Danger
Hazard statements
H227 Combustible liquid.
H332 Harmful if inhaled.
H314 Causes severe skin burns and eye damage.

H372 Causes damage to the kidneys through prolonged or repeated exposure. Route of exposure: Inhalative.
Precautionary statements
P210
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P260
Do not breathe dust/fume/gas/mist/vapors/spray.
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P405
Store locked up.
P501
Dispose of contents/container in accordance with local/regional/national/international regulations.
WHMIS classification
B3 - Combustible liquid
D2A - Very toxic material causing other toxic effects
E - Corrosive material
Classification system
HMIS ratings (scale 0-4)
(Hazardous Materials Identification System)
Health (acute effects) = 3
Flammability = 2
Physical Hazard = 1
Other hazards
Results of PBT and vPvB assessment
PBT:
N/A
vPvB:
N/A

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances
CAS No. / Substance Name:
462-34-0 Boron trifluoride-tetrahydrofuran complex
Identification number(s):
EC number:
207-325-9

SECTION 4. FIRST AID MEASURES

Description of first aid measures
General information

Immediately remove any clothing soiled by the product.
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
Causes severe skin burns.
Causes serious eye damage.
Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5. FIREFIGHTING MEASURES

Extinguishing media
Suitable extinguishing agents
Use carbon dioxide, extinguishing powder or foam.
Water may be ineffective
but may be used for cooling exposed containers.
Special hazards arising from the substance or mixture
If this product is involved in a fire, the following can be released:
Carbon monoxide and carbon dioxide
Hydrogen fluoride (HF)
Boron oxide
Advice for firefighters
Protective equipment:
Wear self-contained respirator.
Wear fully protective impervious suit.

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 material to be released to the environment without official permits.
Methods and materials for containment and cleanup:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralizing agent.
Dispose of contaminated material as waste according to section 13.
Ensure adequate ventilation.
Prevention of secondary hazards:
Keep away from ignition sources.
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.

SECTION 7. HANDLING AND STORAGE

Handling
Precautions for safe handling
Handle under dry protective gas.
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.
Information about protection against explosions and fires:
Keep ignition sources away.
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 water/moisture.
Store away from strong bases.
Store away from oxidizing agents.
Store away from metals.
Further information about storage conditions:
Store under dry inert gas.
This product is moisture sensitive.
Keep container tightly sealed.
Store in cool, dry conditions in well-sealed containers.
Protect from humidity and water.
Specific end use(s)
No data available

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:
None.
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.
Do not inhale dust / smoke / mist.
Avoid contact with the eyes and skin.
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 multi-purpose combination (US) or type ABEK (EN 14387) as a backup to engineering controls. Risk assessment should be performed todetermine if air-purifying respirators are appropriate.
Only use equipment tested and approved under appropriate government standards such as NIOSH (USA) or
CEN (EU).
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
Latex/chloroprene
Penetration time of glove material (in minutes)
No data available
10
Glove thickness
0.6 mm
Eye protection:
Tightly sealed goggles
Full face protection
Body protection:
Protective work clothing

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties
Appearance:
Form: Liquid
Odor: Pungent
Odor threshold: No data available.
pH (50 g/l) at 20 ?C (68 ?F): 1
Melting point/Melting range: 8-9 ?C (46-48 ?F)
Boiling point/Boiling range: 180 ?C (356 ?F)
Sublimation temperature / start: No data available
Flash point: 92 ?C (198 ?F)
Flammability (solid, gas)
No data available.
Ignition temperature: 250 ?C (482 ?F)
Decomposition temperature: No data available
Autoignition: No data available.
Danger of explosion: Product does not present an explosion hazard.
Explosion limits:
Lower: 2.3 Vol %
Upper: 17.7 Vol %
Vapor pressure: No data available
Density at 20 ?C (68 ?F): 1.268 g/cm? (10.581 lbs/gal)
Relative density
No data available.
Vapor density
No data available.
Evaporation rate
No data available.
Solubility in Water (H_2O): Hydrolyzes
Partition coefficient (n-octanol/water): No data available.
Viscosity:
Dynamic: No data available.
Kinematic: No data available.
Other information
No data available

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

Reacts with strong oxidizing agents
Conditions to avoid
No data available
Incompatible materials:
Oxidizing agents
Water/moisture
Bases
Metals
Hazardous decomposition products:
Carbon monoxide and carbon dioxide
Boron oxide
Hydrogen fluoride

SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects
Acute toxicity:
Harmful if inhaled.
Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.
LD/LC50 values that are relevant for classification:
No data
Skin irritation or corrosion:
Causes severe skin burns.
Eye irritation or corrosion:
Causes serious eye damage.
Sensitization:
No sensitizing effects known.
Germ cell mutagenicity:
No effects known.
Carcinogenicity:
EPA-I: Data are inadequate for an assessment of human carcinogenic potential.
Reproductive toxicity:
No effects known.
Specific target organ system toxicity - repeated exposure:
Causes damage to the kidneys through prolonged or repeated exposure. Route of exposure: Inhalative.
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.
Carcinogenic categories
OSHA-Ca (Occupational Safety & Health

Administration)
Substance is not listed

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:
Do not allow material to be released to the environment without official permits.
Do not allow undiluted product or large quantities to reach groundwater, water courses, or sewage systems.
Avoid transfer into the environment.
Results of PBT and vPvB assessment
PBT:
N/A
vPvB:
N/A
Other adverse effects
No data available

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.

SECTION 14. TRANSPORT INFORMATION

UN-Number
DOT, IMDG, IATA
UN3265
UN proper shipping name
DOT
Corrosive liquid, acidic, organic, n.o.s. (Boron trifluoride-tetrahydrofuran complex)
IMDG, IATA

CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
(Boron trifluoride-tetrahydrofuran complex)
Transport hazard class(es)
DOT
Class
8 Corrosive substances.
Label
8
Class
8 (C3) Corrosive substances
Label
8
IMDG, IATA
Class
8 Corrosive substances.
Label
8
Packing group
DOT, IMDG, IATA
II
Environmental hazards:
N/A
Special precautions for user
Warning: Corrosive substances
EMS Number:
F-A,S-B
Segregation groups
Acids
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
N/A
Transport/Additional information:
DOT
Marine Pollutant (DOT):
No
UN "Model Regulation":
UN3265, Corrosive liquid, acidic, organic, n.o.s. (Boron trifluoride-tetrahydrofuran complex), 8, II

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture
GHS GHS label elements, including precautionary statements
Hazard pictograms
GHS05
GHS07
GHS08
Signal word

Danger
Hazard statements
H227 Combustible liquid.
H332 Harmful if inhaled.
H314 Causes severe skin burns and eye damage.
H372 Causes damage to the kidneys through prolonged or repeated exposure. Route of exposure: Inhalative.
Precautionary statements
P210
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P260
Do not breathe dust/fume/gas/mist/vapors/spray.
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P405
Store locked up.
P501
Dispose of contents/container in accordance with local/regional/national/international regulations.
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 Non-Domestic Substances List (NDSL).
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.
Chemical safety assessment:
A Chemical Safety Assessment has not been carried out.

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.