

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 06/11/2009

Reviewed on 06/11/2009

1 Identification of substance:**Product details:****Product name:** Tetraethylammonium tetrafluoroborate**Stock number:**

A10211

L06736

Manufacturer/Supplier:

Alfa Aesar, A Johnson Matthey Company

Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Emergency Phone: (978) 521-6300

CHEMTREC: (800) 424-9300

Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department**Emergency information:**

During normal hours the Health, Safety and Environmental Department. After normal hours call Chemtrec at (800) 424-9300.

2 Composition/Data on components:**Chemical characterization:****Description: (CAS#)**

Tetraethylammonium tetrafluoroborate (CAS# 429-06-1): 100%

Identification number(s):**EINECS Number:** 207-055-1**3 Hazards identification****Hazard description:**

Xn Harmful

Information pertaining to particular dangers for man and environment

R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

R 36/37/38 Irritating to eyes, respiratory system and skin.

Classification system**HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

HEALTH	1
FIRE	1
REACTIVITY	1

Health (acute effects) = 1

Flammability = 1

Reactivity = 1

GHS label elements

Danger

3.1/3 - Toxic if inhaled.

3.1/4 - Harmful if swallowed.

3.1/4 - Harmful in contact with skin.

3.2/2 - Causes skin irritation.

3.3/2A - Causes serious eye irritation.

3.8/3 - May cause respiratory irritation.

Prevention:

Avoid breathing dust/fume/gas/mist/vapours/spray.

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

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

Response:

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

IF ON SKIN: Wash with plenty of soap and water.

IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Call a POISON CENTER or doctor/physician.

Call a POISON CENTER or doctor/physician if you feel unwell.

Specific treatment (see label).

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Specific measures (see label).

Rinse mouth.

If skin irritation occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

Take off contaminated clothing and wash before reuse.

Wash contaminated clothing before reuse.

Storage:

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

Disposal:

Dispose of contents/container in accordance with local/regional/national/international regulations.

4 First aid measures**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

Rub in calcium gluconate solution or calcium gluconate gel immediately.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek immediate medical advice.**5 Fire fighting measures****Suitable extinguishing agents**

Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Nitrogen oxides (NOx)

Hydrogen fluoride (HF)

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures**Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage**Handling****Information for safe handling:**

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.**Storage****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 oxidizing agents.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

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Protect from humidity and water.
This product is hygroscopic.

8 Exposure controls and 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.

Components with limit values that require monitoring at the workplace:

Fluorides (as F)	mg/m3
ACGIH TLV	2.5
Austria MAK	2.5
Belgium TWA	2.5
Finland TWA	2.5
France TWA	2.5
Germany MAK	2.5
Hungary TWA	1; 2-STEL
Netherlands MAC-K	3.5
Norway TWA	0.6
Poland TWA	1; 3-STEL
Sweden NGV	2
Switzerland MAK-W	1.5; 3-KZG-W
United Kingdom TWA	2.5
Russia TWA	2
Denmark TWA	2.5
USA PEL	2.5

Additional information: No data

Personal protective equipment**General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Breathing equipment: Use suitable respirator when high concentrations are present.

Protection of hands: Impervious gloves

Eye protection: Safety glasses

Body protection: Protective work clothing.

9 Physical and chemical properties:**General Information**

Form:	Crystalline powder
Color:	White
Odor:	Not determined

Change in condition

Melting point/Melting range:	Not determined
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined

Flash point: Not applicable

Ignition temperature: Not determined

Decomposition temperature: Not determined

Danger of explosion: Product does not present an explosion hazard.

Explosion limits:

Lower:	Not determined
Upper:	Not determined

Vapor pressure: Not determined

Density: Not determined

10 Stability and reactivity**Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

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Materials to be avoided:Water/moisture
Oxidizing agents**Dangerous reactions** No dangerous reactions known**Dangerous products of decomposition:**Carbon monoxide and carbon dioxide
Nitrogen oxides
Hydrogen fluoride**11 Toxicological information****Acute toxicity:****Primary irritant effect:****on the skin:** Irritant to skin and mucous membranes.**on the eye:** Irritating effect.**Sensitization:** No sensitizing effects known.**Subacute to chronic toxicity:**

Fluorides may cause salivation, nausea, vomiting, diarrhea and abdominal pain, followed by weakness, tremors, shallow respiration, convulsions and coma. May cause brain and kidney damage. Chronic fluoride poisoning can cause severe bone changes, loss of weight, anorexia, anemia and dental defects.

Subacute to chronic toxicity:

Boron affects the central nervous system. Boron poisoning causes depression of the circulation, persistent vomiting and diarrhea, followed by profound shock and coma. The temperature may become subnormal and a scarletina form rash may cover the entire body.

Additional toxicological information:

Danger through skin absorption.

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12 Ecological information:**General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Do not allow material to be released to the environment without proper governmental permits.

13 Disposal considerations**Product:****Recommendation** Consult state, local or national regulations to ensure proper disposal.**Uncleaned packagings:****Recommendation:** Disposal must be made according to official regulations.**14 Transport information****DOT regulations:****Hazard class:**

6.1

Identification number:

UN2811

Packing group:

III

Proper shipping name (technical name): TOXIC SOLID, ORGANIC, N.O.S. (Tetraethylammonium tetrafluoroborate)**Label**

6.1

Land transport ADR/RID (cross-border)**ADR/RID class:**

6.1 (T2) Toxic substances

Danger code (Kemler):

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Product name: Tetraethylammonium tetrafluoroborate

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UN-Number: 2811
Packaging group: III
Description of goods: 2811 TOXIC SOLID, ORGANIC, N.O.S. (Tetraethylammonium tetrafluoroborate)

Maritime transport IMDG:

IMDG Class: 6.1
UN Number: 2811
Label 6.1
Packaging group: III
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (Tetraethylammonium tetrafluoroborate)

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 6.1
UN/ID Number: 2811
Label 6.1
Packaging group: III
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (Tetraethylammonium tetrafluoroborate)

UN "Model Regulation": UN2811, TOXIC SOLID, ORGANIC, N.O.S., 6.1, III

15 Regulations**Product related hazard informations:****Hazard symbols:**

Xn Harmful

Risk phrases:

20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
 36/37/38 Irritating to eyes, respiratory system and skin.

Safety phrases:

9 Keep container in a well-ventilated place.
 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 36/37 Wear suitable protective clothing and gloves.
 60 This material and its container must be disposed of as hazardous waste.

National regulations

This product is not listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory. Use of this product is restricted to research and development only.

Information about limitation of use: For use only by technically qualified individuals.

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department.

Contact: Zachariah Holt

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 IMDG: International Maritime Code for Dangerous Goods
 DOT: US Department of Transportation
 IATA: International Air Transport Association

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IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
HMIS: Hazardous Materials Identification System (USA)

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