1. Identification of the substance/mixture and of the company/undertaking
   
   Product identifier:
   - Product name: (C2H5)4NBF4
   - Product code (SDS NO): 9243E-3

   Details of the supplier of the safety data sheet
   - Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.
   - Address: 3-1, Honmachibashi, Chuo-ku, Osaka, JAPAN
   - Division: Safety Management Dept. of Chemicals
   - Telephone number: +81-6-6946-8061
   - FAX: +81-6-6946-1607
   - e-mail address: kagakuhinanzenkanri@kishida.co.jp

2. Hazards identification

   GHS classification and label elements of the product
   - Classification of the substance or mixture
     
     HEATH HAZARDS
     - Serious eye damage/eye irritation: Category 2A
     - Specific target organ toxicity – single exposure: Category 3 (Respiratory tract irritation)
     - Specific target organ toxicity – repeated exposure: Category 1 (bone)
     
     (Note) GHS classification without description: Not classified/Classification not possible

   Label elements
     
     Signal word: Danger
     
     HAZARD STATEMENT
     - Causes serious eye irritation
     - May cause respiratory irritation
     - Causes damage to organs through prolonged or repeated exposure

   PRECAUTIONARY STATEMENT
     
     Prevention
     - Do not breathe dust/fume/gas/mist/vapors/spray.
     - Use only outdoors or in a well-ventilated area.
     - Wash contaminated parts thoroughly after handling.
     - Wear eye protection/face protection.
     - Do not eat, drink or smoke when using this product.

     Response
     - Get medical advice/attention if you feel unwell.
     - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
     - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
     - If eye irritation persists: Get medical advice/attention.

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

     Disposal
     - Dispose of contents/container in accordance with local/national regulation.
3. Composition/information on ingredients

Mixture/Substance selection:

Substance

Ingredient name: Tetraethylammonium tetrafluoroborate
Content (%): 99 (min)
Chemical formula: C8H20BF4N
Chemicals No. Japan: 2-186, 1-46
CAS No.: 429-06-1
MW: 217.1
ECN0: 207-055-1

Note: The figures shown above are not the specifications of the product.

4. First-aid measures

Descriptions of first-aid measures

General measures

Get medical attention/advice if you feel unwell.

IF INHALED

Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell.

IF ON SKIN (or hair)

Take off immediately all contaminated clothing. Rinse skin with water/shower.
If skin irritation or rash occurs: Get medical advice/attention.

IF IN EYES

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

IF SWALLOWED

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

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Use appropriate extinguishing media suitable for surrounding facilities.
Unsuitable extinguishing media data is not available.
Specific hazards arising from the substance or mixture
Containers may explode when heated.
Fire may produce irritating, corrosive and/or toxic gases.

Advice for firefighters

Specific fire-fighting measures
Evacuate non-essential personnel to safe area.

Special protective equipment and precautions for fire-fighters
Wear fire/flame resistant/retardant clothing.
Wear protective gloves/protective clothing/eye protection/face protection.
Firefighters should wear self-contained breathing apparatus with full face piece operated positive pressure mode.
6. Accidental release measures
Personnel precautions, protective equipment and emergency procedures
Ventilate area until material pick up is complete.
Wear proper protective equipment.
Environmental precautions
Prevent spills from entering sewers, watercourses or low areas.
Avoid raising dust.
Methods and materials for containment and cleaning up
Sweep up, place in a bag and hold for waste disposal.
Preventive measures for secondary accident
Collect spillage.

7. Handling and storage
Precautions for safe handling
Preventive measures
(Exposure Control for handling personnel)
Do not breathe dust/fume/gas/mist/vapors/spray.
(Protective measures against fire and explosion)
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
(Exhaust/ventilator)
Exhaust/ventilator should be available.
(Safety treatments)
Avoid contact with skin.
Avoid contact with eyes.
Safety Measures
Use only outdoors or in a well-ventilated area.
Wear protective gloves, protective clothing or face protection.
Wear eye protection/face protection.
When using do not eat, drink or smoke.
Any incompatibilities
See “10. Stability and Reactivity”
Advice on general occupational hygiene
Wash contaminated parts thoroughly after handling.
Do not eat, drink or smoke when using this product.
Storage
Conditions for safe storage
Keep container tightly closed.
Store in a cool, dry place. Do not store in direct sunlight.
Keep under lock and key.
Container and packaging materials for safe handling
Glass
Polyethylene

8. Exposure controls/personal protection
Control parameters
Exposure controls
Appropriate engineering controls
Do not use in areas without adequate ventilation.
Eye wash station should be available.
Washing facilities should be available.
Individual protection measures
Respiratory protection
Wear respiratory protection.

Hand protection
Wear protective gloves.

Eye protection
Wear eye/face protection.

9. Physical and Chemical Properties
Information on basic physical and chemical properties
Physical state: Crystal or powder
Color: Colorless to light yellow
Odor: Odorless
pH data is not available.
Boiling point or initial boiling point data is not available.
Boiling range data is not available.
Melting point/Freezing point data is not available.
Decomposition temperature data is not available.
Flammability (gases, liquids and solids) data is not available.
Flash point data is not available.
Auto-ignition temperature data is not available.
Lower and upper explosion limit/flammability limit data is not available.
Vapor pressure data is not available.
Relative vapor density (Air=1) data is not available.
Density and/or relative density data is not available.
Kinematic viscosity data is not available.
Solubility:
Solubility in water: Soluble
n-Octanol/water partition coefficient data is not available.
No Particle characteristics data is not available.

10. Stability and Reactivity
Reactivity
Not available.
Chemical stability
Hygroscopic substance. Form HF, BF3 gas by heating in air.
Possibility of hazardous reactions
React with acid and produces HF, BF3 gas.
Conditions to avoid
Contact with incompatible materials.
Contact with fire source.
Incompatible materials
Acids
Hazardous decomposition products
Hydrogen fluoride, BF3

11. Toxicological Information
Information on toxicological effects
Acute toxicity data is not available.
Irritant properties
Skin corrosion/irritation data is not available.
Serious eye damage/irritation
[GHS Cat. Japan, base data]
(Tetraethylammonium tetrafluoroborate)
eyes irritation (ACGIH–TLV, 2005)

Allergenic and sensitizing effects data is not available.
Mutagenic effects data is not available.
Carcinogenic effects data is not available.
Reproductive toxicity data is not available.

STOT
STOT—single exposure
[cat.3 (resp. irrit.)]

[ACGIH–TLV, 2005]

STOT—repeated exposure
[cat.1]

Bone (ACGIH–TLV, 2005)

Respiratory tract irritation data is not available.

Additional data
May cause lung disorders by massive inhalation of powdered substance.
- e.g. fibrosis of lung tissue, cough, sputum, breath shortness, dyspnea, decline of lung function, interstitial lung disease, pneumothorax

12. Ecological Information

Ecotoxicity
data is not available.
Persistence and degradability
data is not available.
Bioaccumulative potential
data is not available.
Mobility in soil
data is not available.
Other adverse effects
Ozone depleting chemical data is not available.

13. Disposal considerations
Waste treatment methods
Dispose of contents/container in accordance with local/national regulation.

14. Transport Information
Not applicable to UN No., UN CLASS
Not applicable to IMDG Code
Not applicable to IATA Dangerous Goods Regulations
Environmental hazards
MARPOL Annex III – Prevention of pollution by harmful substances
Marine pollutants (yes/no): no
MARPOL Annex V – Prevention of pollution by garbage discharge
Specific target organ toxicity – repeated exposure: cat.1
Tetraethylammonium tetrafluoroborate
15. Regulatory Information
Safety, health and environmental regulations/legislation specific for the substance or mixture
US major regulations
  TSCA
    Tetraethylammonium tetrafluoroborate
Other regulatory information
  Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

16. Other information
GHS classification and labelling
  Eye Irrit. 2A: H319 Causes serious eye irritation
  STOT SE 3: H335 May cause respiratory irritation
  STOT RE 1: H372 Causes damage to organs through prolonged or repeated exposure
Reference Book
  Globally Harmonized System of classification and labelling of chemicals, (6th ed., 2015), UN
  Recommendations on the TRANSPORT OF DANGEROUS GOODS 20th edit., 2017 UN
  IMDG Code, 2018 Edition (Incorporating Amendment 39–18)
  IATA Dangerous Goods Regulations (60th Edition) 2019
  Classification, labelling and packaging of substances and mixtures (table3–1 ECNO6182012)
  2016 EMERGENCY RESPONSE GUIDEBOOK (US DOT)
  2019 TLVs and BEIs. (ACGIH)
  http://monographs.iarc.fr/ENG/Classification/index.php
Supplier’s data/information
General Disclaimer
This data sheet was created based on the information we currently have and may be revised
according to new information. In addition, the precautions apply only to normal handling,
and in the case of special handling, please make adequate countermeasure to maintain your
safety.
The data given here is based on current knowledge and experience. The purpose of this
Safety Data Sheet is to describe the products in terms of their safety requirements. The
data does not signify any warranty with regard to the products’ properties.
The GHS classification data given here is based on current Japan official data (NITE published in
2018).