

Potassium Hexafluoraluminate (Cryolite)

Section 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name: Potassium Hexafluoraluminate (Cryolite)
CAS Number: 13775-52-5

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

Product use: - Welding and soldering agents
- Fillers

1.3 Details of the supplier of the safety data sheet

Company name: East Harbour Group Ltd
20 Clough Road, Severalls Industrial Park
Colchester, Essex, CO4 9QS
United Kingdom

Telephone: +44 (0) 333 242 0100
Email: info@eastharbourgroup.com

1.4 Emergency telephone number

Emergency telephone: 0800 246 1274

Section 2: Hazardous identification

2.1 Classification of the substance or mixture

GHS Classification (UN)

Acute toxicity, Category 4	H332: Harmful if inhaled.
Eye irritation, Category 2A	H319: Causes serious eye irritation.
Effects on or via lactation	H362: May cause harm to breast-fed children.
Specific target organ toxicity - repeated exposure, Category 1	H372: Causes damage to organs through prolonged or repeated exposure. if inhaled. (Respiratory Tract), Inhalation
Short-term (acute) aquatic hazard, Category 3	H402: Harmful to aquatic life
Long-term (chronic) aquatic hazard, Category 3	H412: Harmful to aquatic life with long lasting effects

2.2 Label elements

GHS label elements (UN)

Hazardous products which must be listed on the label

- CAS-No. 60996-20-5 cryolite, tripotassium

Potassium Hexafluoraluminate (Cryolite)

Hazard Pictograms



Signal word

Danger

Hazard statement(s)

H319 Causes serious eye irritation.
 H332 Harmful if inhaled.
 H362 May cause harm to breast-fed children.
 H372 Causes damage to organs (Respiratory Tract) through prolonged or repeated exposure if inhaled.
 H412 Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

Prevention

P203 Obtain, read and follow all safety instructions before use
 P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
 P263 Avoid contact during pregnancy/ while nursing.
 P264 Wash skin thoroughly after handling.
 P270 Do not eat, drink or smoke when using this product.
 P271 Use only outdoors or in a well-ventilated area.
 P273 Avoid release to the environment.
 P280 Wear eye protection/ face protection.

Response

P304 + P340 + P317 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical help.
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P318 IF exposed or concerned, get medical advice.
 P337 + P317 If eye irritation persists: Get medical help.

Disposal

P501 Dispose of contents/ container to an approved waste disposal plant.

2.3: Other Hazards which do not result in classification

No data available.

Section 3: Composition/information on ingredients

3.1 Substances

Chemical name cryolite, tripotassium
 Chemical nature Multi constituent substance

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Information on Components and Impurities

Chemical name	CAS-No	GHS Classification	Concentration [%]
Potassium Cryolite	60996-20-5	Acute toxicity, Category 4; H332 Eye irritation, Category 2A ; H319 Specific target organ toxicity - repeated exposure, Category 1; H372 (Respiratory Tract) Effects on or via lactation; H362 Short-term (acute) aquatic hazard, Category 3;H402 Long-term (chronic) aquatic hazard, Category 3; H412	99 - 100

For the full text of the H-Statements mentioned in this Section, see Section 16.

3.2 Mixture

No data available

Section 4: First aid measures

4.1 Description of first aid measures

In case of inhalation

- Move to fresh air.
- Oxygen or artificial respiration if needed.
- If symptoms persist, call a physician.

In case of skin contact

- Take off contaminated clothing and wash before reuse.
- Wash off with plenty of water.
- If symptoms persist, call a physician.

In case of eye contact

- Immediate medical attention is required.

In case of ingestion

- Immediate medical attention is required.
- Take victim immediately to hospital.
- Rinse mouth with water.
- Do NOT induce vomiting.
- Artificial respiration and/or oxygen may be necessary.

4.2 Most important symptoms and effects, both acute and delayed.

In case of inhalation

Symptoms

- Cough
- sore throat
- Nose bleeding
- At high concentrations:
- Chemical pneumonitis

Effects

- Irritating to mucous membranes

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Repeated or prolonged exposure

- Risk of chronic bronchitis

In case of skin contact

Effects

- slight irritation

In case of eye contact

Symptoms

- Irritation
- Redness
- Lachrymation

Effects

- Risk of temporary eye lesions.

In case of ingestion

Symptoms

- Nausea
- Vomiting
- Abdominal pain
- Diarrhoea

Effects

- risk of hypocalcemia with nervous problems (tetany) and cardiac arrhythmia
- Liver injury may occur.

4.3 Indication of any immediate medical attention and special treatment needed.

Notes to physician

- Immediate medical attention is required.
- Medical examination necessary even only on suspicion of intoxication.

Section 5: Fire-fighting measures

5.1 Fire Fighting Media and Instructions:

Suitable extinguishing media

- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment

Unsuitable extinguishing media

- None known.

5.2 Special hazards arising from the substance or mixture

- Not combustible.
- Hazardous decomposition products formed under fire conditions.

5.3 Advice for firefighters

Special protective equipment for firefighters

- In the event of fire, wear self-contained breathing apparatus.
- Use personal protective equipment.

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- Wear chemical resistant oversuit
- Cool containers/tanks with water spray.
- Prevent fire extinguishing water from contaminating surface water or the ground water system

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel

- Keep people away from and upwind of spill/leak.
- Avoid dust formation.

Advice for emergency responders

- Wear self-contained breathing apparatus and protective suit.
- Sweep up to prevent slipping hazard.
- Prevent further leakage or spillage.

6.2 Environmental precautions

- Do not flush into surface water or sanitary sewer system.
- If the product contaminates rivers and lakes or drains inform respective authorities.

6.3. Methods and material for containment and cleaning up

- Pick up and transfer to properly labelled containers.
- Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

- 7. Handling and storage
- 8. Exposure controls / personal protection
- 13. Disposal considerations

Section 7: Handling and storage

7.1 Precautions for safe handling

- Use only in well-ventilated areas.
- Keep away from heat and sources of ignition.
- Avoid high temperatures.
- Avoid inhalation, ingestion and contact with skin and eyes.
- Wear personal protective equipment.
- For personal protection see section 8.

Hygiene measures

- Handle in accordance with good industrial hygiene and safety practice.
- Wash hands before breaks and at the end of workday.
- Eye wash bottles or eye wash stations in compliance with applicable standards.
- When using do not eat, drink or smoke.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions

- Keep containers tightly closed in a dry, cool and well-ventilated place.
- Keep away from open flames, hot surfaces and sources of ignition.
- Keep away from incompatible materials to be indicated by the manufacturer

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- Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems.

Packaging material

Suitable material

- Paper.

Remarks

- Store in original container.

7.3 Specific end use(s)

- Contact your supplier for additional information

Section 8: Exposure controls/personal protection

8.1 Control parameters

Components with workplace occupational exposure limits

Components	Value type	Value	Basis
Potassium Cryolite	TWA	0.14 mg/m ³	Solvay Acceptable Exposure Limit
Form of exposure: Respirable			

8.2 Exposure controls

Control measures

Engineering controls

- Provide appropriate exhaust ventilation at places where dust is formed.
- Apply technical measures to comply with the occupational exposure limits.

8.3 Personal protective equipment

Respiratory protection

- Respirator with a particle filter (EN 143)

Hand protection

- Impervious gloves

Eye protection

- Tightly fitting safety goggles
- Eye wash bottles or eye wash stations in compliance with applicable standards.

Skin and body protection

- Dust impervious protective suit
- Change working clothes after each work shift.
- Contaminated work clothing should not be allowed out of the workplace.

Hygiene measures

- Handle in accordance with good industrial hygiene and safety practice.
- Wash hands before breaks and at the end of workday.
- Eye wash bottles or eye wash stations in compliance with applicable standards.

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- When using do not eat, drink or smoke.

Environmental exposure controls

- Dispose of rinse water in accordance with local and national regulations.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Solid
Physical State	Powder
Form	White
Colour	White
Odour	odourless
Odour Threshold	No data available
Melting Point / Freezing Point	1,025 °C
Boiling Point / Boiling Range	Thermal decomposition: yes
Flammability (solid, gas)	The product is not flammable.
Flammability (liquids)	No data available
Flammability / Explosive Limits	No data available
Flash Point	Not applicable, inorganic
Auto-ignition temperature	No data available
Decomposition temperature	>= 700 °C
pH	6.0 (1.4 g/l) (25 °C)
Viscosity or Viscosity dynamic	No data available
Solubility or Water Solubility	1.4 g/l (25 °C)
Partition Coefficient: n-octanol/water	No data available
Vapour Pressure	No data available
Density or Bulk Density	450 - 650 kg/m ³ (20 °C)
Relative Density	2.8 (20 °C)
Relative vapor density	No data available
Particle characteristics	Particle size: < 0.06 mm (95 %)
Evaporation Rate (Butylacetate = 1)	No data available

9.2 Other safety information

Oxidizing properties	Not considered as oxidizing
Self-ignition	No data available
Molecular weight	258 g/mol

Section 10: Stability and Reactivity

10.1 Reactivity

- No decomposition if used as directed.

10.2 Chemical Stability

- Stable under recommended storage conditions.

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10.3 Possibility of hazardous reactions

- Decomposes by reaction with strong acids., Decomposes on heating.

10.4 Conditions to avoid.

- Keep away from open flames, hot surfaces and sources of ignition.
- Avoid excessive heat for prolonged periods of time.

10.5 Incompatible materials

- Strong acids and strong bases

10.6 Hazardous decomposition products

- Hydrogen fluoride

Section 11: Toxicological Information

11.1 Information on toxicological effects:

Acute toxicity

Acute oral toxicity

cryolite, tripotassium

LD50 : > 2,000 mg/kg - Rat , female

Method: OECD Test Guideline 423

Not classified as hazardous for acute oral toxicity according to GHS.

No mortality observed at this dose.

Unpublished reports

Acute inhalation toxicity

cryolite, tripotassium

By analogy

LC50 - 4 h (dust/mist) : 1 - 5 mg/l - Rat , male and female

Test substance: Aluminium potassium fluoride

This product is classified as acute toxicity, category 4

Unpublished reports

Acute dermal toxicity

Acute toxicity

(other routes of administration)

No data available

No data available

Skin corrosion/irritation

cryolite, tripotassium

reconstructed human epidermis (RhE)

No skin irritation

Method: OECD Test Guideline 439

Unpublished reports

Serious eye damage/eye irritation

cryolite, tripotassium

chicken

Irritating to eyes.

Method: OECD Test Guideline 438

Unpublished reports

Respiratory or skin sensitisation

cryolite, tripotassium

By analogy

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Maximisation Test - Guinea pig
Maximum Stimulation Index < 3
Not classified as sensitising by skin contact according to GHS criteria
Method: OECD Test Guideline 406
Test substance: Aluminium potassium fluoride
Unpublished reports

Mutagenicity Genotoxicity in vitro cryolite, tripotassium

Ames test
with and without metabolic activation

negative
Method: OECD Test Guideline 471
Unpublished reports
By analogy

In vitro micronucleus test
Strain: Human lymphocytes
with and without metabolic activation

positive
Method: OECD Test Guideline 487
Test substance: Aluminium potassium fluoride
Unpublished reports

By analogy

Gene mutation assays in mammalian cells.
Strain: mouse lymphoma cells
with and without metabolic activation

negative
Method: OECD Test Guideline 476
Test substance: Aluminium potassium fluoride
Unpublished reports

Genotoxicity in vivo cryolite, tripotassium

By analogy
Chromosome aberration test in vivo - Rat male
Inhalation
Method: OECD Test Guideline 475
Test substance: Cryolite

negative
Unpublished reports

Carcinogenicity Toxicity for reproduction and development

No data available

Toxicity to reproduction/Fertility

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cryolite, tripotassium

By analogy
Two-generation study - Rat, male and female, Oral
General Toxicity - Parent NOAEL: > 128 mg/kg
Test substance, Cryolite, Unpublished reports

Developmental Toxicity/Teratogenicity

cryolite, tripotassium

By analogy
Rat, Oral
Teratogenicity NOAEL:42mg/kg
Test substance, Cryolite, Unpublished reports

STOT - single exposure

cryolite, tripotassium

The substance or mixture is not classified as specific target organ toxicant, single exposure according to GHS criteria.

STOT - repeated exposure

cryolite, tripotassium

The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1 according to GHS criteria.

cryolite, tripotassium

By analogy
Inhalation (aerosol) 90-day - Rat , male and female
NOAEC: 1.21 mg/m³
Test substance: Aluminium potassium fluoride
Target Organs: Respiratory system, Lungs
Method: OECD Test Guideline 413
Unpublished reports

Experience with human exposure Aspiration toxicity

No data available
No data available

Section 12: Ecological Information

12.1 Toxicity

Aquatic Compartment

Acute toxicity to fish

cryolite, tripotassium

By analogy

LC50 - 96 h : > 10 mg/l - Brachydanio rerio (zebrafish)
static test
Analytical monitoring: yes

Test substance: Aluminium potassium fluoride
Method: OECD Test Guideline 203
Harmful to fish.
Unpublished reports

Acute toxicity to daphnia and other aquatic invertebrates

cryolite, tripotassium

EC50 - 48 h : 22.9 mg/l - Daphnia magna (Water flea)
static test

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Analytical monitoring: yes
Method: OECD Test Guideline 202
Harmful to aquatic invertebrates.
Unpublished reports

Toxicity to aquatic plants cryolite, tripotassium

By analogy
ErC50 - 72 h : 33.5 mg/l - Pseudokirchneriella subcapitata
(green algae)
static test
Analytical monitoring: yes
Test substance: Aluminium potassium fluoride
Method: OECD Test Guideline 201
Harmful to algae.
Unpublished reports

By analogy
NOEC - 72 h : 11.2 mg/l - Pseudokirchneriella subcapitata
(green algae)
static test
Analytical monitoring: yes
End point: Growth rate
Test substance: Aluminium potassium fluoride
Method: OECD Test Guideline 201
Unpublished reports

Toxicity to microorganisms cryolite, tripotassium

By analogy
EC50 - 3 h : > 75 mg/l - activated sludge
static test
Test substance: Aluminium potassium fluoride
Method: OECD Test Guideline 209
Unpublished reports

Chronic toxicity to fish Chronic toxicity to daphnia and other aquatic invertebrates

No data available
No data available

12.2 Persistence and degradability

Abiotic degradation Stability in water cryolite, tripotassium

acid/base equilibrium as a function of pH
complexation/precipitation of inorganic and organic materials

Physical- and photo-chemical Elimination

No data available

Biodegradation Biodegradability cryolite, tripotassium

Not data available

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The methods for determining biodegradability are not applicable to inorganic substances.

Degradability assessment

cryolite, tripotassium

No data available

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water

cryolite, tripotassium

No data available

Bioconcentration factor (BCF)

No data available

12.4 Mobility in soil

Adsorption potential (Koc)

Known distribution to environmental compartments

No data available

No data available

12.5 Results of PBT and vPvB assessment

cryolite, tripotassium

No data available

12.6 Other adverse effects

Ecotoxicity assessment

Short-term (acute) aquatic hazard

cryolite, tripotassium

Harmful to aquatic life.

Long-term (chronic) aquatic hazard

cryolite, tripotassium

Harmful to aquatic life with long lasting effects.

Section 13: Disposal considerations

13.1 Waste treatment methods

Product Disposal

- Where possible recycling is preferred to disposal or incineration.
- In accordance with local and national regulations.

Advice on cleaning and disposal of packaging

- Dispose of as unused product.

Section 14: Transport Information

IMDG

- Not regulated

IATA

- Not regulated

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Note: The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transport regulations for hazardous materials, it would be advisable to check their validity with your sales office.

Section 15: Regulatory Information

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

Local regulations

No data available

Notification status

Inventory Information

United States TSCA Inventory

Status

- All substances listed as active on the TSCA inventory
- Listed under CAS: 60304-36-1

Canadian Domestic Substances List (DSL)

- One or more components not listed on inventory

Australian Inventory of Industrial Chemicals (AIIC)

- One or more components not listed on inventory

Japan. CSCL - Inventory of Existing and New Chemical Substances

- Listed on Inventory

Korea. Korean Existing Chemicals Inventory (KECI)

- Listed on Inventory
- Listed under CAS: 60304-36-1

China. Inventory of Existing Chemical Substances in China (IECSC)

- One or more components not listed on inventory

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

- One or more components not listed on inventory

Taiwan Chemical Substance InTCSI)

- One or more components not listed on inventory

New Zealand. Inventory of Chemical Substances NZIoC inventory. Additional HSNO obligations may apply.

- One or more components is not listed on the
- Please refer to Section 15 of SDS for New Zealand.

EU. European Registration, Evaluation, Authorization and Restriction of Chemical (REACH)

- When purchased from a Solvay legal entity based in the EEA ("European Economic Area"), this product is compliant with the registration provisions of the REACH Regulation (EC) 1907/2006 as all its components are either excluded, exempt, and/or registered. When purchased from a legal entity outside of the EEA, please contact your local representative for additional information.

Potassium Hexafluoraluminate (Cryolite)

Section 16: Other Information

Full text of H-Statements

- H319: Causes serious eye irritation.
- H332: Harmful if inhaled.
- H362: May cause harm to breast-fed children.
- H372: Causes damage to organs through prolonged or repeated exposure.
- H402: Harmful to aquatic life.
- H412: Harmful to aquatic life with long lasting effects.

Key or legend to abbreviations and acronyms used in the safety data sheet

- ADR: European Agreement on International Carriage of Dangerous Goods by Road.
- ADN: European Agreement on the International Carriage of Dangerous Goods by Inland Waterways.
- RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
- IATA: International Air Transport Association.
- ICAO-TI: Technical Instructions for Safe Transport of Dangerous Goods by Air.
- IMDG: International Maritime Dangerous Goods.
- TWA: Time weighted average
- ATE: Estimated value of acute toxicity
- EC: European Community number
- CAS: Chemical Abstracts Service.
- LD50: Substance that causes 50% (half) death in the test animals group (Median Fatal Dose).
- LC50: Substance concentration causing 50% (half) death in the test animals group.
- EC50: Effective Concentration of the substance causing the maximum of 50%.
- PBT: Persistent, Bioaccumulative and Toxic substance.
- vPvB: Very Persistent and Very Bioaccumulative.
- GHS/CLP/SEA: Classification, labeling, packaging regulation
- DNEL: Derived No Effect Level
- PNEC: Predicted No Effect Concentration
- STOT: Specific Target Organ Toxicity

Not all acronyms listed above are referenced in this SDS.

Further information

- Distribute new edition to clients