

Potassium cryolite

Material safety data sheet

Manufacturer.

Triveni Chemicals

135 Pancharatna Char Rasta

G I D C Vapi.396195 Gujarat India

Tel. 91 260 2400022 / 3258683 Fax. 2400045

Chemical : Tripotassium hexafluoroaluminate

MSDS Number : KCRYO – 1103

1. Company and Product Identification

Product Name :	Potassium cryolite
Chemical name :	tripotassium hexafluoroaluminate
Synonyms :	None
Chemicals formula:	$K_3 AlF_6$
Molecular weight :	258
CAS number :	13775-52-5
EINECS number :	237-409-0

2. Composition /Information on Ingredients

Ingredients	Formulas	WT. Percent	CAS #
Tripotassium hexafluoroaluminate	$K_3 AlF_6$	>95.00%	13775-52-5

3. Hazards identification

Emergency overview:

- Present hazards from its ionizing fluorine .
- Hazards product for human health and the aquatic environment .
- In case of decomposition , releases hydrogen fluoride.

3.1 Route of Entry : Inhalation :yes skin : yes ingestion : yes

3.2 Potential Effects of exposure :

Inhalation :

- Nose and throat irritation .
- Cough
- At high concentrate, risk of chemical pneumonitis,
- In case of repeated or prolonged exposure : risk of bronchial hyperreactivity .
- In case of repeated or prolonged exposure :risk of sore throat , nosebleeds,chronic bronchitis .
- In case of repeated or prolonged exposure, at high concentration : risk of pulmonary fibrosis.

Eyes : slight irritation .

Skin contact :

- Slight irritation .
- In case of repeated or prolonged exposure ,risk of allergic dermatitis,

Ingestion:

- By ingestion of large quantities :nausea and vomiting , abdominal cramps and diarrhea .
- By ingestion of large quantities: risk of hypocalcemia with nervous disorder (tetany)and cardiac rhythm disorder .
- By ingestion of large quantities: risk of liver alteration .
- By ingestion of large quantities: risk of general symptoms.

Carcinogenicity : see section 11.3.

4. First –Aid measures

General Recommendation :

4.1 Inhalation :

- Remove the subject from dusty environment and have him / her blow nose .
- Consult a physician in case of respiratory symptoms.

Eyes

- Flush eyes with running water for 15min , while keeping the eyelids wide open
- Consult an ophthalmologist in case of persistent pain .

Skin : remove contaminated shoes, socks and clothing ; wash the affected skin soap &

water

Ingestion : Contact a physician for advise

If the subject is completely conscious:

- Rinse mouth with fresh water .
- Give to drink a 1% aqueous calcium gluconate solution .
- If the subject present nervous , respiratory or cardiovascular disorder ;administer oxygen

If the subject is unconscious :

- Administer classical resuscitation measure.
- Never give anything by mouth an unconscious person.

4.2

Medical Treatment / notes to physician : None .

5. Fire – Fighting Measures

5.1 **Flash point : not applicable** .: Not applicable

5.2 **Auto – ignition temperature:** Not applicable

5.3 **Flammability limits** : Not applicable

5.4 **Unusual Fire & explosion Hazards** :No data

5.5 Extinguishing Methods

Common : in case of fire in close proximity , all means of extinguishing are acceptable .

Inappropriate extinguishing means : No restriction .

5.6 Fire fighting procedures

Specific hazards :

- Non –combustible .
- Formation of dangerous gas / vapour in case of decomposition

Protective measure in case of Intervention :

- Wear self –contained breathing apparatus when in close proximity or in confined spaces .
- When intervention in close proximity wear acid –resistant over –suit .
- After intervention , take a shower , remove clothing carefully ,clean &check equipment .

Other precaution : control the use of water due to environment risk (see section 6)

6. Accidental release Measures

6.1 precaution :

- follow the protective with measure given in section 8.
- Avoid dispersing the dust into a cloud .

6.2 Precaution for protection of the environment :

- collect the product with suitable means avoiding dust formation .
- Place everything into a closed , labeled container compatible with the product
- For disposal method ,refer to section 13

6.3 cleanup method :

- Immediately notify the appropriate authorities in case of significant discharge .
- Do not discharge into the environment (sewers , rivers, soils ,.....)

7. Handling and storage

7.1 handling :

- keep away from reactive product (see section 10)
- avoid heating the product above the decomposition temperature (section 9)

7.2 storage : keep in original packing , closed

7.3 specific uses :For specific use question , contact suppliers

7.4 other precaution :

- warn people about the dangers of the product .
- avoid dust & formation of dust clouds .
- follow the protective measure given in section 8

7.5 packing : paper lined with PE.

8. Exposure Control / personal protection

- 8.1 Exposure limited values
Authorized limited values
Fluorides
TLV ACGIH- USA
2.5 mg ?m (as F)
Acgih & tlv are registered trademark of the American conference of government
Industrial hygienists .

- 8.2 1 Exposure control :
follow the protective measure given in sec 7.
Maintain employee exposures to level below the applicable exposure limits
8.2.1 occupational exposure control :
8.2.1.1: ventilation : provide local ventilation suitable for the dust risk
8.2.1.3 hand protection : protective gloves – chemicals resistant (pvc).
8.2.1.4 eyes “ : dust proof goggles , if dusty .
8.2.1.5 skin “ : protective clothing suitable for the handling of chemicals
8.3 other precaution :
 - Provides shower & eyewash stations
 - Do not smoke , eat or drinks in the working area
 - Consult the industrial hygienist or the safety manager for the selection of personal protective equipment suitable for the working condition

- 8.4 Other information : follows local , states & federal regulation for aqueous emission (see section 15)

9. Physicals & chemicals properties

- 9.1 Appearance: powder.
Colours : whites
Odors: odorless
Assay 98.00%

9.2 important Health , safety & environment information :

- pH: 6@ 25 (77F) concentration : 1.4g/f.
change of states :
melting point : 1,025 c (1877 F).
boiling point : not applicable (decomposition) .
decomposition temperature :> 700 c (. 1,2992 f)
specific gravity (H2O=1) 2.8@ 20 c (68 f)
solubility :
water : 13.4 g /l at 25 c (77 f) .
fat : no data . partition
coefficient : not applicable .
viscosity: no data

10. Stability and Reactivity

Stability :

- 10.1 condition to avoid: negligible .
10.2 materials & substances products : hydrogen fluorides .
• strong acids
• “ bases
10.3 hazards decomposition products : hydrogen fluoride
10.4 “ poly merization : will not occur .

11. Toxicological Information

- 11.1 acute toxicate :
inhalation : no data .
Oral : LD50, rat > 2000 mg / kg (cryolite) .
Dermal : no data
Irritation :
• rabbits , non – irritant (skin) (cryolite)
• “ irritant (eyes) (cryolite)

sensitization : no data

comments :

- No specific data .
- By analogy with the tested compound .
- Chronic exposure may entail dentals or skeletal fluorosis

11.2 chronic toxicity : (cryolite)

- inhalation , after prolonged expositre , rat > mg / m, observed effect.
- Orals route (diet) , after repeated exposure , various species , target organ : skeleton , > 14ppm , observed effect .
- Orals route (diet) , after repeated exposure , rat / mouses ,. target organ : skeleton , > 25ppm , observed effect (sodium fluoride) 600 mg / m, observed effect .
- In vitro, no mutagenic effects .
- In vivo , ambiguous mutagenic effects
- No tertogenic effects
- No carcinogenic effect (sodium fluoride) .

Main health effect :

- No data available for humans .
- Possible irrigation of the mucous membranes , eyes & skin .
- Risk of respiratory sensitization .
- Chronic exposure to the product can induce bone calcification disorders

In halation :

- Nose and throat irrigatation
- Cough
 - At high concentrate, risk of chemical pneumonitis,
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- Ingestion : large quantities :nausea and vomiting , abdominal cramps and diarrhea or risk of hypocalcemia with nervous disorder (tetany)and cardiac rhythm disorder or risk of liver alteration .

11.3 Carcinogenic designation : Non e

12. Ecological information

12.1 acute ecotoxicity : crustaceans, Daphnia magna , EC50 ,48 hour (s), 22.9 mgn / l.

12.2 mobility :

- Air – mobility as solid aerosols .
- Water / soil – low solubility & mobility
- Soil / sediments – adsorption on minerals and organic soil constituents .

12.3 Abiotic degradation :

- Water /soil – acid / base equilibrium as a function of pH
Degradation products :n fluoro – complexes (acid pH)/ hydroxy – alumina (aenvironment pH) fluorhydric acid / fluoride.
- Water/ soil – complexation / precipitation of inorganic materials

1.24 biotic degradation : not applicable (inorganic compound) .

12.4 potential for bioaccumulation :

- bioconcentration : iog Po/ w – not applicable (ionizable in organic compound)
- “ - accumulation into vegetable leafs (fluorides)

12.5 other adverse effects / comments :

- harmful for aquatic organism.
- Products fate is highly dependent on environment condition : pH, temperature , oxidoreductive potential , minerals & organic content of the medium ,.....

13. Disposal Consideration

13.1 waste treatment :

- Disposal in compliance with local ,state & federal regulation .
- “ of the product in a facility authorized for industrial waste .

13.2 packing treatments : dispose of the containers by dispatching them to an approved incineration facility for hazardous waste .

13.3 RCRA Hazardous waste : not listed .

14. Transport Information

MODE	DOT	IMDG	IATA
Proper shipping	Not a regulated Hazardous materials	Not a regulated Hazardous materials	

Name

15. Regulatory Information

national regulation (us)

TSCA Inventory 8(b) : yes .

SARA TITLE IIIsec . 302/303 extremely hazardous substances (40CFR 355): NO

SARA TITLE IIIsec . 311/312 (40CFR 370): yes .

Hazardous category : chronic health hazards .

Threshold planning quantity : 10000lbs .

SARA TITLE IIIsec . 313 toxic chemicals emission reporting (40cfr 372): no

Cercla hazardous substances (40 cfr part 302)

Listed substances :no

unListed substances :no

states components listing :

states

CA	COMMENT
CA	AIRborne contaminants & emission inventory
IL	hazardous substances listed
IN	toxic “ disclosure to employee
KY	occupation health& safety standard –air /
MN	hazardous substances listed
NJ	right to know subs listed
NJ	toxic catastrophe prevention act
NC	exposure limited for air contaminated
PA	right to know
RI	right to know

WHMIS Classification : D2B-toxic material .

This product has been classified in accordance with the hazards criteria of the controlled product regulation ,& the MSDS contain all the information required by the controlled products regulations.

Labeling according to directive 1999/45/EC.

<u>CATEGORY</u>	<u>ID</u>	<u>PHRASE</u>
SYMBOLS	T	TOXIC
PRASES	20/22	harmful by in halation and if swallowed
	48/23/25	toxic : danger of serious damage to health by prolonged exposure through in halation & if swallowed .
	52/53	harmful to aquatic organic , may cause long-term adverse effects in the aquatic environ ments .
pharases	13	KEEP away from food , drink & animals feedstuffs.
	22	do not breathe dust .
	36	wear suitable protective clothing
	45	in case of an accident or if you feel unwell , seek medical advice immediately (show the label where possible) seek medicals advice .
	61	avoids releses to the environments . refer to
	62	specials instruction / safety data sheets

16. Other Information

16.1 ratings :

NFPA (NATIONAL FIRE PROTECTION ASSOCIATION)

Health =0 flammability =0 instaboly =0 special =none

HMIS (HAZARDOUS MATERIALS INFORMATION)

Health =0 fire =0 reactivity=0 PPE =SUPPLIED by user ; dependent on local condition

16.2 other information :

the previous information is based upon our current knowledge & experience of our product &is not exhaustive . it applies to the product as defined by the specification . in case of combination or mixtures , one must confirm that no new hazards are ,likely to exist . in any case , the user is not exempt from observing all legal , administrative & regulatory procedures relating to the product , personal hygiene & integrity of the work environment . (unless noted to the contrary the technical applies information applies only to pure product).