

SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier **Synthetic Cryolite**

CAS number: 13775-53-6
EU number: 237-410-6
Index number: 009-016-00-2
REACH registration number: 01-2119511565-43-0002

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

Production of cryolite: PROC 2, PROC 3, PROC 8b, PROC 9
Production and use of cryolite in the aluminium industry: PROC 8a, PROC 22, PROC 26, PROC 0
Formulation & (re)packing of substances and mixtures containing cryolite: PROC 5, PROC 8a, PROC 8b, PROC 9
Manufacturing of articles containing cryolite: PROC 3, PROC 5, PROC 6, PROC 7, PROC 8a, PROC 10, PROC 13, PROC 14, PROC 21, PROC 22.
End use of articles in industry containing cryolite: PROC 2, PROC 21, PROC 24, PROC 25
Use as flux: PROC 22, PROC 23
End use of articles containing cryolite by professionals: PROC 15, PROC 21, PROC 23, PROC 24, PROC 25
End use of articles containing cryolite by consumers: PROC 11, PROC 38

1.3. Details of the supplier of the safety data sheet:

Bige Holding Trading and Production Ltd.
H-5007 Szolnok, Tószegi út 51.
Tel.: + 36 56 505 800
Fax: + 36 56 505 800

1.3.1. Responsible person: Imre Kubola
E-mail: ikubola@tvmszolnok.hu

1.4. Emergency telephone number: **Public Toxicological Health Service (ETTSZ)**
1096 Budapest, Nagyvárad tér 2.
Tel.: +36 1 476 6464, +36 80 201 199

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification based on the CLP regulation:
Acute toxicity: Category 4
Repeated exposure target organ toxicity: Category 1
Reproductive toxicity: Additional category for effects on or via lactation
Hazardous to the aquatic environment — Chronic Hazard: Category 2

GHS07



GHS08



GHS09



DANGER

H-phrases:

H332 – Harmful if inhaled.

H372 – Causes damage to organs through prolonged or repeated exposure <state route of exposure if it is conclusively.

H362 – May cause harm to breast-fed children.

H411 – Toxic to aquatic life with long lasting effects.

P-phrases:

- P260** – Do not breathe dust/fume/gas/mist/vapours/spray.
P263 – Avoid contact during pregnancy/while nursing.
P270 – Do not eat, drink or smoke when using this product.
P273 – Avoid release to the environment.
P308 + P313 – IF exposed or concerned: Get medical advice/attention.
P501 – Dispose of contents/container to hazardous waste collection point.

Classification based on the REACH regulation:



Toxic



Environmental hazard

Risk phrases:

- R 20** - Harmful by inhalation.
R 48/23/25 - Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
R 51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R 64 - May cause harm to breastfed babies.

Safety phrases:

- S 22** - Do not breathe dust
S 37 - Wear suitable gloves
S 45 - In case of accident or if you feel unwell seek medical advice immediately (show the label where possible).
S 61 - Avoid release to the environment. Refer to special instructions/safety data sheet.

2.2. Label elements

GHS07



GHS08



DANGER

GHS09



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P308 + P313 – IF exposed or concerned: Get medical advice/attention.
P501 – Dispose of contents/container to hazardous waste collection point.

2.3. Other hazards

In case of inhalation:

mucous membrane irritation. Symptoms: coughing, sore throat, nose bleeding.

In case of higher concentrations: chemical pneumonia.

In case of repeated or long term exposure: chronic bronchitis.
In case of skin contact: slight irritation.
In case of eye contact: slight irritation.
In case of ingestion: risk of hypocalcemia with nervous problems (tetany) and cardiac arrhythmia.
Liver injury may occur.
Symptoms: Nausea, Vomiting, Abdominal pain, Diarrhoea

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

Synonyms: Sodium aluminium fluoride, sodium hexafluoro aluminate, aluminium sodium hexafluoride
Formula: Na_3AlF_6
Active agent: Sodium aluminium fluoride: min.: 97%
Other hazardous contaminant: none.
Relative molar mass: 209,94 g/mol
Inorganic substance.

4. FIRST AID MEASURES

4.1. Description of first aid measures:

IN CASE OF INGESTION:

Measures:

- Obtain immediate medical attention and show him the label!
- Place the victim into comfortable position!
- Do not give the victim anything to eat or drink, and do not induce vomiting if the victim is unconscious.
- Rinse mouth with water and give to drink a 1% aqueous calcium gluconate solution.
- Artificial respiration and/or oxygen may be necessary.
- Do not induce vomiting.

IN CASE OF INHALATION:

Measures:

- Take the victim into fresh air, loosen his clothes and let him rest.
- Remove the contaminated clothes.
- Artificial respiration and/or oxygen may be necessary.
- In case of symptoms, obtain medical attention!

IN CASE OF SKIN CONTACT:

Measures:

- Remove the contaminated clothes and wash them before re-use.
- Wash the contaminated area with plenty of warm water and soap (for 15 minutes)!
- Treat with calcium gluconate paste.
- In case of symptoms, obtain medical attention and show him the label!

IN CASE OF EYE CONTACT:

Measures:

- Flush the eyes with calcium gluconate solution.
- Obtain immediate medical attention and show him the label!

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

In case of inhalation:

mucous membrane irritation. Symptoms: coughing, sore throat, nose bleeding.

In case of higher concentrations: chemical pneumonia.

In case of repeated or long term exposure: chronic bronchitis.

In case of skin contact:

slight irritation.

In case of eye contact:

slight irritation.

In case of ingestion:

risk of hypocalcemia with nervous problems (tetany) and cardiac arrhythmia.

Liver injury may occur.

Symptoms: Nausea, Vomiting, Abdominal pain, Diarrhoea

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

In case of ingestion, skin contact and eye contact, use the appropriate forms of calcium gluconate.

5. FIREFIGHTING MEASURES

5.1. Extinguishing media:

5.1.1. Suitable extinguishing media:

The synthetic cryolite is not combustible, in case of fire use extinguishing media appropriate for the environment.

- 5.1.2. Unsuitable extinguishing media:
None known.
- 5.2. Special hazards arising from the substance or mixture:
In case of fire toxic substances may be formed (aluminium fluoride, sodium fluoride).
- 5.3. Advice for firefighters:
Wear full protective clothing and self-contained breathing apparatus. The containers exposed to fire should be cooled with water spray.
- 6. ACCIDENTAL RELEASE MEASURES**
- 6.1. Personal precautions, protective equipment and emergency procedures:
- 6.1.1. For non-emergency personnel:
Keep unprotected people away, allow only well trained experts wearing suitable protective clothing to abide in the field of accident.
- 6.1.2. For emergency responders:
Avoid contact with skin. Avoid eye contact. Do not inhale the dusts, avoid formation of dust. Avoid formation of dust. The spilled product forms slippery film on the floor.
- 6.2. Environmental precautions:
Dispose of spillage and waste (product/packaging) in accordance with all applicable environmental laws. Do not allow to enter sewers/soil/surface or ground water. Notify the respective authorities in accordance with local law in the case of environmental pollution immediately.
- 6.3. Methods and material for containment and cleaning up:
Collect the spilled material in mechanical way then place into a suitable, closed, properly labelled chemical waste container for disposal. During disposal wear suitable personal protective equipment. Should be neutralised with lime milk.
- 6.4. Reference to other sections:
For further and detailed information see section 8 and 13.
- 7. HANDLING AND STORAGE**
- 7.1. Precautions for safe handling:
Observe conventional hygiene precautions.
Avoid the direct contact with the product.
After the work hours wash your hands thoroughly.
Do not eat and smoke in the workplace.
Use adequate dust proof mask.
Technical measures:
Ensure adequate ventilation.
Avoid formation of dust.
The wet product should be handled with special care, because it may damage the skin and the mucuous membranes.
Keep the unused containers closed.
The emptied containers may contain residues of the product, which can be hazardous.
Precautions against fire and explosion:
"E" flammability class, no special measure is required.
Keep away from heat and ignition sources.
- 7.2. Conditions for safe storage, including any incompatibilities:
Keep in original, closed and labelled container.
The place of storage has to be properly ventilated and cleanable.
Store in cool and dry place.
Keep away from food, beverages, luxury goods, feed, pharmacies.
Follow all instructions on the label.
Storage: for indefinite time.
Keep the unauthorised people away from the place of the storage. Designate such places with signs and labels.
Incompatible materials: strong acids and strong oxidants.
Packaging material: well closable container. Recommended packaging material: paper.
- 7.3. Specific end use(s):
For the indentified uses see the expostion scenario.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters:

DNEL		Routes of exposure	Exposure frequency:	Remarks:
Worker:	Consumer:			
		Dermal:	Short term (acute) Long term (repeated)	
		Inhalative	Short term (acute) Long term (repeated)	
		Oral	Short term (acute) Long term (repeated)	

PNEC			Exposure frequency:	Remarks:
Water	Soil	Air		
			Short term (single use) Long term (repeated)	
			Short term (single use) Long term (repeated)	
			Short term (single use) Long term (repeated)	

8.2. Exposure controls:

In case of a hazardous material with no controlled concentration limit it is the employer's duty to keep concentration levels down to a minimum achievable by existing scientific and technological means, where the hazardous substance poses no harm to workers.

8.2.1. Appropriate engineering controls

In pursuance of work is proper foresight needed to avoid spilling onto clothes and floors and to avoid contact with eyes and skin. Avoid the inhalation of dust.

Avoid the contact with skin and eyes.

In the vicinity of the workplace safety shower and eye washing fountain has to be installed.

Do not eat, smoke, store food in the workplace.

Ensure cold-warm water washing facilities.

Observe conventional hygiene precautions. Ensure adequate ventilation.

The ventilation system should be corrosion proof.

8.2.2. Individual protection measures, such as personal protective equipment:

1. Eye/face protection: use adequate face mask.
2. Skin protection:
 - a. Hand protection: Use appropriate protective gloves.
 - b. Other: use appropriate, closed protective clothes and protective boots.
3. Respiratory protection in case of sufficient ventilation, not necessary.
4. Thermal hazard.

8.2.3. Environmental exposure controls:

No specific prescription.

The requirements detailed in Section 8 assume skilled work under normal conditions and usage of the product for appropriate aims. If conditions differ from normal or work is carried out under extreme conditions an expert's advice should be sought out before deciding upon further protective measures.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties:

Parameter	Test method:	Remarks:
1. Appearance:		
		solid (crystalline), clean or white to yellowish, sometimes red or black
2. Odour:		odourless
3. Odour threshold:		no data available
4. pH value:		6,4 in 1% aqueous solution
5. Melting point/freezing point:		1009 – 1012 °C / -
6. Initial boiling point and boiling range:		not applicable
7. Flash point:		not applicable
8. Evaporation rate:		no data available
9. Flammability:		non flammable.
10. Upper/lower flammability or explosive limits:		not applicable
11. Vapour pressure:		not applicable
12. Relative density:		2,97

13. Solubility(ies):	In water:	
	0.602 g/L	20 °C, pH: > 5.5 - < 7
	0.217 g/L	20 °C, pH: > 8.5 - < 9
	0.42 g/L	25 °C, pH: ca. 7
	1.35 g/L	100 °C, pH: ca. 7
14. Partition coefficient: n-octanol/water:	not applicable	
15. Auto-ignition temperature:	not applicable	
16. Decomposition temperature:	not applicable	
17. Viscosity:	not applicable	
18. Explosive properties:	not explosive	
19. Oxidizing properties:	non oxidizing	

- 9.2. Other information:
Bulk density: 700-1600 kg/m³
Particle size distribution:
D10 = 1.73 µm; D50 = 9.78 µm; D90 = 20.97 µm.

10. STABILITY AND REACTIVITY

- 10.1. Reactivity:
None known.
- 10.2. Chemical stability:
At normal temperature: stabile at general conditions of work.
- 10.3. Possibility of hazardous reactions:
In case of heating (> 1000 °C) it decomposes, and toxic aluminium fluoride and sodium fluoride are formed.
It decomposes to the effect of heat and strong acids.
- 10.4. Conditions to avoid:
avoid heating.
- 10.5. Incompatible materials:
strong acids and strong oxidants.
- 10.6. Hazardous decomposition products:
aluminium fluoride, sodium fluoride, hydrogen fluoride.

11. TOXICOLOGICAL INFORMATION

- 11.1. Information on toxicological effects:
Acute toxicity: Category 4
Skin corrosion/irritation: None known.
Serious eye damage/eye irritation: none known.
Respiratory or skin sensitisation: none known.
Germ cell mutagenicity: none known.
Carcinogenicity: none known.
Reproductive toxicity: Additional category for effects on or via lactation
STOT-single exposure: none known.
Repeated exposure target organ toxicity: Category 1
Aspiration hazard: none known.
Hazardous to the aquatic environment — Chronic Hazard: Category 2
- 11.1.1. For substances subject to registration, brief summaries of the information derived from the test conducted:
For detailed test results contact the supplier of the substance.
- 11.1.2. Relevant toxicological properties of the hazardous substances:
LC₅₀ (inhalative, rat): 4470 mg/m³
LD₅₀ (Oral, rat): > 50 mg/kg
LD₅₀ (dermal): > 2100 mg/bw kg.
- 11.1.3. Information on likely routes of exposure:
ingestion, inhalation, skin contact, eye contact.
- 11.1.4. Symptoms related to the physical, chemical and toxicological characteristics:
Its permanent exposure might cause teeth and bone structure deformation.
Due to its poor solubility in water it hardly irritates the mucous membranes, eyes and respiratory organs. Its intoxication is unknown when it is swallowed, due to its faint solubility the material is discharged from the body in time. Although it might cause significant deformation in teeth and bones. Deformation usually begins at hip-bone and lumbar. In metallurgical processes and in case of contacting the reaction partners, hydrogen fluoride or other soluble, volatile fluorides might be emitted, the toxicity of which is much higher.
In case of inhalation:
mucous membrane irritation. Symptoms: coughing, sore throat, nose bleeding.
Concentration: chemical pneumonia.

In case of repeated or long term exposure: chronic bronchitis.
In case of skin contact:
slight irritation.
In case of eye contact:
slight irritation.
In case of ingestion:
risk of hypocalcemia with nervous problems (tetany) and cardiac arrhythmia.
Liver injury may occur.
Symptoms: Nausea, Vomiting, Abdominal pain, Diarrhoea

- 11.1.5. Delayed and immediate effects as well as chronic effects from short and long-term exposure: may be irritating to skin, may be slightly irritating to the eyes.
- 11.1.6. Interactive effects:
No data available.
- 11.1.7. Absence of specific data
No information.
- 11.1.8. Other information:
No data available.

12. ECOLOGICAL INFORMATION

- 12.1. Toxicity:
Do not enter into drains, watercourses and soil.
Toxic to aquatic organisms, may cause long-term adverse effect in the aquatic environment.
LC₅₀ (Brachydanio reriois): 99 mg/l/96h
EC₅₀ (Daphnia magna): 156 mg/l/48h
ErC₅₀ (Pseudokirchneriella subcapitata): 8,8 mg/l/72h
NOEC (growth rate): 1,0 mg/l/72h
Water hazard class (WGK, German regulation, self-classification): Slightly water polluting substance
- 12.2. Persistence and degradability:
Biodegradability: since the substance is inorganic, no studies have to be conducted.
- 12.3. Bioaccumulation potential:
Bioaccumulation potential is not expected since the substance dissolves into several ions.
- 12.4. Mobility in soil:
It spreads in the form of aerosol. Faint solubility and spreading. Adsorption in deposits or organic sediments.
- 12.5. Results of PBT and vPvB assessment:
Not applicable for inorganic substances.
- 12.6. Other adverse effects:
No data available.

13. DISPOSAL CONSIDERATIONS

- 13.1. Waste treatment methods:
Disposal according to the local regulations.
- 13.1.1. Information regarding the disposal of the product:
Do not dispose together with domestic waste. Do not enter into drains, watercourses and soil. Recycle is possible or incinerate in a licensed incinerator.
During the disposal of the product, its residue and its packaging the national and local prescriptions should be observed. The EWC codes indicated below are only recommendations, but they may have to be changed due to special circumstances, in such cases new classification may be needed.
- 13.1.2. Information regarding the disposal of the packaging:
According to the consideration regarding the product. Empty the containers as much as possible.
- 13.1.3. Physical/chemical properties that may affect waste treatment options shall be specified:
None known.
- 13.1.4. Sewage disposal:
It should not get into waste water or sewer without dilution and neutralisation. Lime is suggested for neutralisation.
- 13.1.5. Special precautions for any recommended waste treatment
No data available.

14. TRANSPORT INFORMATION

- 14.1. UN Number:
3077
- 14.2. UN proper shipping name:
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, N.O.S. (Cryolite)

- 14.3. Transport hazard class(es):
9
Classification code: M7
Label: 9
Hazard number (Kemler number): 90
EMS: F-A, M-S
- 14.4. Packing group:
III
- 14.5. Environmental hazards:
No data available.
- 14.6. Special precautions for user:
No data available.
- 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:
No data available.

15. REGULATORY INFORMATION

- 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture:
1. REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC
 2. COMMISSION REGULATION (EC) No 790/2009 of 10 August 2009 amending, for the purposes of its adaptation to technical and scientific progress, Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures
 3. DIRECTIVE 1999/45/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations
 4. REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006
 5. COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)
- 15.2. Chemical safety assessment:
Chemical safety assessment is available about the product.

16. OTHER INFORMATION

Information regarding the revision of the safety data sheet: -
Full text of the abbreviations in the safety data sheet:
DNEL: Derived no effect level. **PNEC:** Predicted no effect concentration. **CMR effects:** Carcinogenicity, Mutagenicity and reproduction toxicity. **PBT:** Persistent, bioaccumulative and toxic. . n.d.: not defined. . n.a.: Not applicable. .
Data sources: -
Relevant R-Phrases (number and full text) of Section 2 and 3:
R 20 - Harmful by inhalation.
R 48/23/25 - Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
R 51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R 64 - May cause harm to breastfed babies.
Relevant H-Phrases (number and full text) of Section 2 and 3:
H332 – Harmful if inhaled.
H372 – Causes damage to organs through prolonged or repeated exposure <state route of exposure if it is conclusively.
H362 – May cause harm to breast-fed children.
H411 – Toxic to aquatic life with long lasting effects.
Training instructions-
Recommended restrictions on use (non-statutory recommendations by supplier): -
This safety data sheet had been prepared on the basis of information provided by the manufacturer. The information, data and recommendations contained herein are provided in good faith, obtained from reliable sources and believed to be true and accurate as of the date issued; however, no representation is made as to the comprehensiveness of the information. The SDS shall be used only as a guide for handling the product; in the course of handling and using the product other considerations may arise or be required. Since the conditions or the handling, the storage and the disposal of this product are beyond the control of the

manufacturer, the distributor or the preparer of this SDS, no warranty, expressed or implied, regarding the product described in this SDS shall be created or inferred by any statement in this SDS. No responsibility is assumed regarding the accuracy, completeness or suitability of all or any of the information contained herein or the results to be obtained from the use thereof at the time of use. In no way shall the manufacturer, the distributor or the preparer of the be liable for any claims, losses or damages of third parties, personal injury, property damage, lost profits or any special, direct, indirect, incidental, consequential or exemplary damages resulting from the use of or reliance upon such information. Users are cautioned to determine the appropriateness and applicability of the above information to their particular circumstances and purposes and assume all risk associated with the use of this product. It is the responsibility of the user to fully comply with local, national and international regulations concerning the use of this product.