Safety Data Sheet

BOE 7:1

Issue Date : 30th May 2017

1. Product and Company Identification

Trade name: **BOE 7:1**

Product code: Not Applicable

Supplier Info:
KMG Singapore Pte Ltd
14 Tuas Ave 20
Singapura 638826

Recommended use: Use according to manufacturers' directions

Emergency contact: 3E Emergency Services: +1-760-476-3960

2. Hazard Identification

Hazard Classification
Classification of the substance or mixture :
Acute Toxicity (Inhalation) Category 3
Acute Toxicity (Dermal) Category 2
Acute Toxicity (Oral) Category 2
Skin Corrosion/Irritation Category 1

GHS label elements :
Pictograms

Signal Word: DANGER!
Hazard Statements :
H331 Toxic if inhaled
H310 Fatal in contact with skin
H300 Fatal if swallowed
H314 Causes severe skin burns and eye damage
Precautionary Statements :
Prevention:

P260	Do not breathe dust/fume/gas/mist/vapours/spray
P262	Do not get in eyes, on skin, or on clothing.
P264	Wash clothing and PPE thoroughly after handling
P270	Do not eat, drink or smoke when using this product
P271	Use only outdoors or in a well-ventilated area
P280	Wear protective gloves/protective clothing/eye protection/face protection

Response:

P301 + P330 + P331	IF SWALLOWED: Rinse mouth , Do NOT induce vomiting
P301+310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P302 + P350	IF ON SKIN: Gently wash with plenty of soap and water.
P304+P340	If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing
P303 + P361 + P353	If on skin, Remove/Take off immediately all contaminated clothing, Rinse skin with water/shower
P305 + P351 + P338	If in eyes, Remove contact lenses, if present and easy to do, continue rinsing. Rinse cautiously for several minutes.
P310	Immediately call a POISON CENTER or doctor/physician.
P311	Call a POISON CENTER or doctor/physician.
P361	Remove/Take off immediately all contaminated clothing.
P363	Wash contaminated clothing before reuse
Storage:	
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up
Disposal :	
P501	Dispose of contents according to state/federal laws

Other Hazards : Not Available

3. Composition/Information on ingredients

Chemical property

Description:

Components	CAS No.	EC/EINECS	Pre-registration No	% weight
Hydrofluoric Acid	7664-39-3	-	-	6 - 7
Ammonium Fluoride	12125-01-8	-		33 – 36
Water	7732-18-5			57 - 61

4. First-Aid Measures

The first aid measures for different routes of exposure:

General information: Immediately remove contaminated clothing. Rinse skin with water/shower

Inhalation: Following inhalation exposure, a 2.5% calcium gluconate solution can be given by nebuliser. If breathing is difficult, give oxygen. Immediately call a poison control centre or doctor for treatment advice. Move person to fresh air. If breathing has ceased, start mouth-to-mouth artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Skin contact: Immediately remove contaminated clothing, and any extraneous chemical, if possible to do so without delay. Initiate and maintain gentle and continuous irrigation until the patient receives medical care. If medical care is not promptly available, continue to irrigate for one hour. Cover wound with sterile dressing. A physician should be consulted for all exposures. Burns covering an area greater than fifty-two square centimetres (8 square inches) require immediate treatment by a medical doctor. Remove contaminated clothing. With gloved hand apply 2.5% calcium gluconate gel to the burn area.

Eye contact: Immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. A 1.0 pct calcium gluconate gel solution can be used to irrigate the eye using a syringe or a continuous irrigation device. Get medical attention immediately.

Ingestion: Immediately call a poison control centre or doctor for treatment advice. If ingested give milk or calcium gluconate by mouth. Administer several vials of 10% aqueous calcium gluconate orally. (Calcium carbonate or an antacid containing calcium carbonate or magnesium carbonate or hydroxide may also be

	used.) Do not give anything by mouth to an unconscious person. Do not induce vomiting. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration.
Protection for first aiders:	Personal protective equipment.
Indications to physicians:	Treatment: This advice is provided to the attending physician because of the specific properties of hydrogen fluoride and hydrofluoric acid. All cases of ingestion and airway exposure, and skin burns with hydrofluoric acid >20% should be regarded as potentially fatal. Patients who have burns and pain within minutes of exposure can be assumed to have been exposed to concentrated acid and are at risk of rapid clinical deterioration and death. Burns can be accompanied by absorption of fluoride through the skin with sequestration of circulating calcium leading to hypocalcaemia and hyperkalaemia from the release of cell contents. Fatal cardiac dysrhythmias may ensue. A person who has HF burns greater than 25 square inches or who has been burned with concentrated HF should be admitted immediately to an intensive care unit and carefully monitored by EKG for 24 to 48 hours. Blood sampling should be taken to monitor circulating fluoride, potassium and calcium levels. Haemodialysis may be necessary for fluoride removal and correction of hyperkalaemia.

5. Fire-fighting Measures

FIRE AND EXPLOSION DATA
FLASH POINT: NO FLASH POINT
FLAMMABLE LIMITS: LOWER: NA, UPPER: NA
AUTOIGNITION TEMP.: NA
EXTINGUISHING MEDIA:
This product is not flammable. Use extinguishing agent suitable for type of surrounding fire.
SPECIAL FIRE FIGHTING PROCEDURES:
Use water spray to cool unopened containers. Cool containers with flooding quantities of water until well after fire is out. Prevent runoff from fire control or dilution from entering streams, sewers or drinking water supply. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace
UNUSUAL FIRE AND EXPLOSION HAZARDS:
Non-combustible.
Not considered to be a significant fire risk.
Acids may react with metals to produce hydrogen, a highly flammable and explosive gas.
Heating may cause expansion or decomposition leading to violent rupture of containers

6. Accidental Release Measures

SMALL SPILL:
Environmental hazard - contain spillage.
Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material.
Check regularly for spills and leaks.
Clean up all spills immediately.
Avoid breathing vapours and contact with skin and eyes.
Control personal contact by using protective equipment.
Contain and absorb spill with sand, earth, inert material or vermiculite.
LARGE SPILL:
Environmental hazard - contain spillage.

Clear area of personnel and move upwind.
Alert Fire Brigade and tell them location and nature of hazard.
Wear full body protective clothing with breathing apparatus.

Prevent, by any means available, spillage from entering drains or water course

7. Handling and Storage

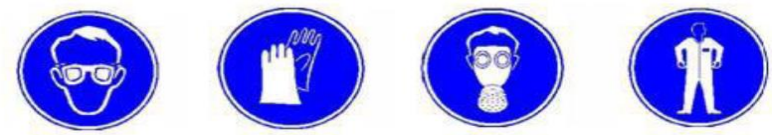
Storage:
Use care in handling/storage. Keep away from food, drink and animal feeding stuffs. Keep containers tightly closed in a dry, cool and well-ventilated place. Protect against direct sunlight. Store away from incompatible materials.
Handling:
Use only with adequate ventilation. Avoid inhalation of vapours and contact with skin and eyes. Wash thoroughly after handling. Use Personal Protective Equipment recommended in section 8 of the SDS.
Safe handling advice Handle and open container with care.
Conditions for storage rooms and vessels: Keep in a cool, well ventilated area

8. Exposure Controls and Personal Protection

Engineering controls: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
Control parameters:
Consult also local authorities for acceptable exposure limits
Singapore. PELs. (Workplace Safety and Health (Permissible Exposure Levels of Toxic Substances) Order)
Components Type Value
Ammonium fluoride TWA 2.5 mg/m3
(CAS 12125-01-8)
Hydrofluoric acid STEL 2.6 mg/m3
(CAS 7664-39-3)
3 ppm
TWA 2.5 mg/m3
US. ACGIH Threshold Limit Values
Components Type Value
Ammonium fluoride TWA 2.5 mg/m3
(CAS 12125-01-8)
Hydrofluoric acid Ceiling 2 ppm
(CAS 7664-39-3)
TWA 0.5 ppm

Biological standards: Not Available

Personal protective equipment (PPE):



Respiratory protection:
In case of inadequate ventilation use suitable respirator. Use respiratory equipment with gas filter, type B.

Hand protection: Protective gloves

Eye protection: Do not get this material in contact with eyes. Wear approved safety glasses or goggles. Wear face shield if there is risk of splashes. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Skin and body protection: Wear appropriate chemical resistant clothing. Protective shoes or boots. Structural firefighter's protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations. Do not get this material in contact with skin. Do not get this material on clothing. Wear chemical protective equipment that is specifically recommended by the Personal Protective Equipment manufacturer.

Hygiene measures: When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product. Remove and isolate contaminated clothing and shoes. Handle in accordance with good industrial hygiene and safety practices. Clean contaminated clothing before reuse.

9. Physical and Chemical Properties

Form:	Liquid
Colour:	Colourless
Odour:	Pungent
Odour Threshold:	Not Available
PH :	Acidic
Melting point/Freezing Point:	Not Available
Boiling Point/Boiling Range:	>100°C
Flammability (Solid, gas):	
Flashpoint:	-
Test method:	-
Open cup:	-
Close cup:	-
Decomposition temperature:	-
Liquid Density:	Not Available
Percent Volatile:	Not Available
Vapour density:	Not Available
Vapour pressure:	Not Available
Specific Gravity @ 20°C:	Not Available
Solubility:	Not Miscible

10.Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage.
Special Remarks on Reactivity:
Stable at normal conditions.
Conditions to avoid:
Protect from moisture. Do not allow water to enter container. Heat, sunlight, incompatibles.
Incompatible materials:
Oxidising materials. Strong bases. Strong acids. Metals. Chlorine trifluoride.
Corrosivity
Not Applicable
Hazardous decomposition products
Ammonia. Hydrogen fluoride. Nitrogen oxides (NOx)

11.Toxicological Information

TOXICITY TO ANIMALS
Ammonium fluoride (CAS 12125-01-8)

Acute
Oral
LD50 Rat
50 mg/kg
Hydrofluoric acid (CAS 7664-39-3)
Acute
LC50 Rat
Inhalation
1278 mg/l, 1 Hours
ROUTES OF ENTRY: Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.
Symptoms:
Inhalation: May cause damage to mucous membranes in nose, throat, lungs and bronchial system. Be aware that symptoms of lung oedema (shortness of breath) may develop up to 24 hours after exposure. Eye contact: Corrosive. Prolonged contact causes serious eye and tissue damage. May cause blindness. Skin contact: May cause serious chemical burns to the skin. Direct contact: May cause burns in mucous membranes, throat, oesophagus and stomach.
Skin corrosion/irritation: Causes severe skin burns.
Serious eye damage/irritation: Causes severe eye burns.
Respiratory sensitizer: Not classified.
Skin sensitizer not a skin sensitizer.
Germ cell mutagenicity: Not classified.
Carcinogenicity Not classified by IARC, ACGIH, NTP or OSHA.
Toxic to reproduction: Not classified.
Specific target organ toxicity -single exposure: May cause respiratory irritation.
Specific target organ toxicity - repeated exposure: Causes damage to organs through prolonged or repeated exposure: Kidneys. Liver Lung Bone. Tooth.
Aspiration hazard: Not classified.
Chronic effects: High concentrations: Risk of hypocalcemia with nervous problems (tetany) and cardiac arrhythmia.

Relevant negative data: Not available.

Other information
Absorbed fluoride can cause metabolic imbalances with irregular heartbeat, nausea, dizziness, vomiting and seizures. Prolonged overexposure to fluorides may increase fluoride content of bones and teeth, and may result in fluorosis, and brittleness of bones. Erosion of exposed teeth. High concentrations: Risk of hypocalcemia with nervous problems (tetany) and cardiac arrhythmia.

12.Ecological Information

Ecotoxicity
This product is not expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems.
BOD5 and COD
Not available.
Products of Biodegradation
Not available.
Toxicity of the Products of Biodegradation
Not available.
Special Remarks on the Products of Biodegradation
Not available.

13.Disposal Considerations

Methods of Waste Disposal:
Consult Federal, State or Local authorities for proper disposal procedures

14.Transport Information

Domestic (Land, D.O.T.)
Proper Shipping Name: Corrosive liquids, toxic, n.o.s. (hydrofluoric acid, ammonium fluoride)
Hazard Class: 8 / 6.1
UN / NA: 2922
Packing Group: II

International (Water, I.M.O.)
Proper Shipping Name: Corrosive liquids, toxic, n.o.s. (hydrofluoric acid, ammonium fluoride)
Hazard Class: 8 / 6.1
UN / NA: 2922
Packing Group: II

International (Air, I.C.A.O.)
Proper Shipping Name: Corrosive liquids, toxic, n.o.s. (hydrofluoric acid, ammonium fluoride)
Hazard Class: 8 / 6.1
UN / NA: 2922
Packing Group: II

15.Regulatory Information

Labelling according to EC Directives
According to EC Regulation
According to GHS directives
According to Singapore Standards (SS586: 2008)
To follow local state and federal laws where applicable
Applicable regulations
Environmental Protection and Management (Hazardous Substances) Regulations
Hydrofluoric acid (CAS 7664-39-3) 500 kg
Environmental Public Health Act
Hydrogen fluoride (CAS 7664-39-3)
Montreal Protocol
Not applicable.
Rotterdam Convention
Not applicable.
Stockholm Convention
Not applicable.
Water (CAS: 7732-18-5) is found on the following regulatory lists;
"IMO IBC Code Chapter 18: List of products to which the Code does not apply”,” International Fragrance Association (IFRA) Survey: Transparency List","OECD Representative List of High Production Volume (HPV) Chemicals"

16.Other Information

Abbreviations and acronyms:

GHS: Globally Harmonized System of Classification and Labelling of Chemicals
OSHA: The Occupational Health & Safety Assessment Series (Singapore)
NIOSH: National Institute for Occupational Safety and Health (USA)
CAS: Chemical Abstracts Service
LD50: 50% Lethal Dose
LC50: 50% Lethal Concentration
UN: United Nations
TSCA: Toxic Substances Control Act

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