

# Ammonium tetrafluoroborate

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830  
Date of issue: 2/15/2019 Version: 1.0

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Product form	: Substance
Substance name	: Ammonium tetrafluoroborate
IUPAC name	: ammonium tetrafluoroboranuide
EC-No.	: 237-531-4
CAS-No.	: 13826-83-0
Product code	: 90026668
Formula	: H4BF4N
Product group	: Raw material

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

##### 1.2.1. Relevant identified uses

Main use category	: Professional use, Industrial use
Industrial/Professional use spec	: For professional use only Industrial Laboratory use.

##### 1.2.2. Uses advised against

No additional information available

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

##### Supplier

Scafell Organics  
Molekula Ltd  
Lingfield Way  
Darlington - England  
T +44 (0) 1949 823777 / +44 (0) 7590 545705  
[info@molekula.com](mailto:info@molekula.com) / [kbowen@molekula.com](mailto:kbowen@molekula.com) - [www.molekula.com](http://www.molekula.com)

#### 1.4. Emergency telephone number

Emergency number : +44 (0) 7590 545705

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute toxicity (oral), Category 4	H302
Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 2	H319
Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation	H335
Full text of H statements : see section 16	

##### Adverse physicochemical, human health and environmental effects

No additional information available

#### 2.2. Label elements

##### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS07

Signal word (CLP)

: Warning

Hazard statements (CLP)

: H302 - Harmful if swallowed.  
H315 - Causes skin irritation.  
H319 - Causes serious eye irritation.  
H335 - May cause respiratory irritation.

Precautionary statements (CLP)

: P231+P232 - Handle and store contents under inert gas. Protect from moisture.  
P280 - Wear protective clothing, eye protection, face protection, protective gloves.  
P301+P312 - IF SWALLOWED: Call a POISON CENTRE or doctor if you feel unwell.  
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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### 2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Substance type : Mono-constituent

Name	Product identifier	%
Ammonium tetrafluoroborate	(CAS-No.) 13826-83-0 (EC-No.) 237-531-4	100

Full text of H-statements: see section 16

### 3.2. Mixtures

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. If possible show this sheet, if not available show packaging or label. Do not leave affected person unattended.
First-aid measures after inhalation	: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Give oxygen or artificial respiration if necessary. If experiencing respiratory symptoms: Get medical advice/attention.
First-aid measures after skin contact	: After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water. Do not remove clothing if it sticks to the skin. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if pain, blinking or redness persists.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Get medical advice/attention.

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

Symptoms/effects after inhalation	: May cause respiratory irritation. Inhalation may cause irritation (cough, short breathing, difficulty in breathing).
Symptoms/effects after skin contact	: Causes skin irritation. Dust may cause irritation in skin folds or by contact in combination with tight clothing. Repeated exposure may cause skin dryness or cracking.
Symptoms/effects after eye contact	: Causes serious eye irritation. Redness, pain, stinging. Tears.
Symptoms/effects after ingestion	: Swallowing a small quantity of this material will result in serious health hazard. Ingestion may cause nausea and vomiting.

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

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media	: Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media	: Do not use a heavy water stream.

### 5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : boron. Carbon oxides (CO, CO<sub>2</sub>). hydrogen fluoride. Nitrogen oxides.

### 5.3. Advice for firefighters

Precautionary measures fire	: Exposure to fire/heat: seal off low-lying areas. Keep container tightly closed and away from heat, sparks and flame.
Firefighting instructions	: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment. Use extinguishing agent suitable for surrounding fire.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.
Other information	: Warn all persons of toxic hazard.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Isolate from fire, if possible, without unnecessary risk. No flames, no sparks. Eliminate all sources of ignition. Avoid dust formation.

#### 6.1.1. For non-emergency personnel

Protective equipment	: Wear recommended personal protective equipment.
Emergency procedures	: Evacuate unnecessary personnel. Mark out the contaminated area with signs and prevent access to unauthorized personnel. Avoid contact with skin, eyes and clothing. Do not breathe dust. Do not touch or walk on the spilled product.

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Measures in case of dust release : Keep upwind. Ventilate the area thoroughly, especially low lying areas (basements, workpits etc).

### 6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection. Use self-contained breathing apparatus and chemically protective clothing.

Emergency procedures : Ventilate area. Stop leak if safe to do so.

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters.

### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimise generation of dust. Store away from other materials.

### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Provide local exhaust or general room ventilation. Avoid creating or spreading dust.

Hygiene measures : Take off immediately all contaminated clothing and wash it before reuse. Contaminated work clothing should not be allowed out of the workplace. Always wash hands after handling the product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not eat, drink or smoke when using this product.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Direct sunlight, Heat sources. Keep container closed when not in use. Handle under inert gas. Moisture sensitive.

Incompatible products : Aluminium. Strong acids. Strong bases. Glass packaging.

Incompatible materials : Sources of ignition. Direct sunlight. Heat sources. Material is hygroscopic. Moisture sensitive.

Storage area : Store at ambient temperature.

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Ammonium tetrafluoroborate (13826-83-0)

United Kingdom	WEL TWA (mg/m <sup>3</sup> )	2.5 mg/m <sup>3</sup> Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used
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### 8.2. Exposure controls

#### Appropriate engineering controls:

Handle in accordance with good industrial hygiene and safety procedures. Provide local exhaust or general room ventilation.

#### Personal protective equipment:

Wear recommended personal protective equipment. Avoid all unnecessary exposure.

<b>Hand protection:</b>					
The protective gloves to be used must comply with the specifications of the regulation 2016/425 and the resultant standard EN 374					
<b>Type</b>	<b>Material</b>	<b>Permeation</b>	<b>Thickness (mm)</b>	<b>Penetration</b>	<b>Standard</b>
Disposable gloves	Nitrile rubber (NBR)	6 (> 480 minutes)	0.11		EN 374
<b>Eye protection:</b>					
Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure. Use eye protection according to EN 166, designed to protect against powders and dusts. Chemical goggles or safety glasses					
<b>Type</b>	<b>Use</b>		<b>Characteristics</b>	<b>Standard</b>	
Safety glasses	Dust		With side shields	EN 166	
<b>Skin and body protection:</b>					
Emergency safety showers should be available in the immediate vicinity of any potential exposure. Keep suitable chemically resistant protective clothing readily available for emergency use					

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Type	Standard		
Long sleeved protective clothing	EN ISO 13982		
<b>Respiratory protection:</b>			
Self contained breathing apparatus, in case of emergency. Where exposure through inhalation may occur from use, respiratory protection equipment is recommended			
Device	Filter type	Condition	Standard
Respiratory protective device with a particle filter	Type P3	Dust protection	EN 14387

### Other information:

Do not eat, drink or smoke during use.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Powder.
Molecular mass	: 104.84 g/mol
Colour	: white.
Odour	: No data available.
Odour threshold	: No data available
pH	: 3.5 at 5 g/l at 20 °C
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: 230 °C
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Non flammable.
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density	: 1.871 g/cm <sup>3</sup> at 25 °C
Solubility	: No data available
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under recommended handling and storage conditions (see section 7).

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Protect from sunlight. Moisture. Material is hygroscopic.

### 10.5. Incompatible materials

Strong acids. Strong bases. Glass. Aluminium.

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. Thermal decomposition generates : ammonia. boron. hydrogen fluoride. Nitrogen oxides.

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### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity (oral)	: Oral: Harmful if swallowed.
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified
Skin corrosion/irritation	: Causes skin irritation. pH: 3.5 at 5 g/l at 20 °C
Serious eye damage/irritation	: Causes serious eye irritation. pH: 3.5 at 5 g/l at 20 °C
Respiratory or skin sensitisation	: Not classified
Additional information	: Based on available data, the classification criteria are not met
Germ cell mutagenicity	: Not classified
Additional information	: Based on available data, the classification criteria are not met
Carcinogenicity	: Not classified
Additional information	: Based on available data, the classification criteria are not met
Reproductive toxicity	: Not classified
Additional information	: Based on available data, the classification criteria are not met
STOT-single exposure	: May cause respiratory irritation.
STOT-repeated exposure	: Not classified
Additional information	: Based on available data, the classification criteria are not met
Aspiration hazard	: Not classified
Additional information	: Based on available data, the classification criteria are not met
Potential adverse human health effects and symptoms	: Harmful if swallowed.

### SECTION 12: Ecological information

#### 12.1. Toxicity

Acute aquatic toxicity	: Not classified
Chronic aquatic toxicity	: Not classified

#### 12.2. Persistence and degradability

##### Ammonium tetrafluoroborate (13826-83-0)

Persistence and degradability	Potentially biodegradable.
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#### 12.3. Bioaccumulative potential

##### Ammonium tetrafluoroborate (13826-83-0)

Bioaccumulative potential	Not potentially bioaccumulable.
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#### 12.4. Mobility in soil

##### Ammonium tetrafluoroborate (13826-83-0)

Ecology - soil	Expected to be highly mobile in soil.
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#### 12.5. Results of PBT and vPvB assessment

##### Ammonium tetrafluoroborate (13826-83-0)

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

#### 12.6. Other adverse effects

Additional information	: Avoid release to the environment.
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### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Product/Packaging disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials	: Avoid release to the environment.

### SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
<b>14.1. UN number</b>				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated

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<b>14.2. UN proper shipping name</b>				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
<b>14.3. Transport hazard class(es)</b>				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
<b>14.4. Packing group</b>				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
<b>14.5. Environmental hazards</b>				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
No supplementary information available				
<b>14.6. Special precautions for user</b>				
<b>Overland transport</b>				
Not regulated				
<b>Transport by sea</b>				
Not regulated				
<b>Air transport</b>				
Not regulated				
<b>Inland waterway transport</b>				
Not regulated				
<b>Rail transport</b>				
Not regulated				
<b>14.7. Transport in bulk according to Annex II of Marpol and the IBC Code</b>				
Not applicable				

## SECTION 15: Regulatory information

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

#### 15.1.1. EU-Regulations

No REACH Annex XVII restrictions

Ammonium tetrafluoroborate is not on the REACH Candidate List

Ammonium tetrafluoroborate is not on the REACH Annex XIV List

Directive 2012/18/EU (SEVESO III)

#### 15.1.2. National regulations

No additional information available

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out for the substance or the mixture by the supplier

## SECTION 16: Other information

Data sources	: 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.
Other information	: None.

Full text of H- and EUH-statements:	
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

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*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*