1-Ethyl-3-methylimidazolium tetrafluoroborate

Version number: GHS 3.0 Revision: 28.09.2023

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

1.1 Product identifier

Identification of the substance	**1-Ethyl-3-methylimidazolium tetrafluoroborate**
Registration number (REACH)	01-2120086816-43-0000
EC number	671-177-5
CAS number	143314-16-3
Alternative name(s)	EMIM-BF4
Alternative number(s)	00103.1000, 00103.3000

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

Relevant identified uses	The product is intended for research, analysis and scientific education Scientific research and development Product and process oriented research and development Electrolyte
HS code	29332990.

1.3 Details of the supplier of the safety data sheet

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A-8074 Raaba-Grambach
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Telephone: +43 (0) 316 4009-4200
e-mail: office@proionic.com
Website: www.proionic.com

1.4 Emergency telephone number	Poisoning information center Austria: +43 (0) 1 406 43 43
Emergency information service	Mo-fr 8am-4pm (CET): +43 (0) 316/ 4009- 4200

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

This substance does not meet the criteria for classification.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

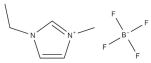
Not required

2.3 Other hazards

There is no additional information.

SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance	1-Ethyl-3-methylimidazolium tetrafluoroborate
IUPAC name	1-ethyl-3-methyl-3H-imidazolium tetrafluoridoboranuide(1-)
Identifiers	
CAS No	143314-16-3
EC No	671-177-5
Purity	95 – 99,9 %
Molecular formula	C6H11BF4N2
Molar mass	198 $^{g}/_{mol}$
Structural formula	

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. Provide fresh air.

Following skin contact

Wash with plenty of soap and water.

Following eye contact

Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. In all cases of doubt, or when symptoms persist, seek medical advice.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting. In all cases of doubt, or when symptoms persist, seek medical advice.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects are not known to date.

4.3 Indication of any immediate medical attention and special treatment needed

None

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Alcohol resistant foam, BC-powder, Carbon dioxide (CO2)

Unsuitable extinguishing media

For this substance no limitations of extinguishing agents are given

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO2), Bortrifluoride (BF3)

5.3 Advice for firefighters

Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters

Self-contained breathing apparatus (SCBA)

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For removal of spilled product always wear personal protective equipment.

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains

Advice on how to clean up a spill

After spillage neutralize with lime made into a slurry in sodium carbonate solution . Wipe up with absorbent material (e.g. cloth, fleece).

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

General cleaning of small amounts

Use water or isopropanol. Collect the washing solution and dispose as halogenated waste.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations

Use only in well-ventilated areas. Contaminated surfaces must not be cleaned with compressed air due to the possible formation of aerosols.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in the original container in a cool, well-ventilated place. Keep container tightly closed and dry.

7.3 Specific end use(s)

The product must be used only for the purposes specified by the manufacturer (see above).

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls

General ventilation. General industrial hygiene practice. Take precautions, which are usual when handling chemicals.

Individual protection measures (personal protective equipment)

The individual protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the handled substances.

Eye/face protection

Wear eye protection.

Skin protection

- hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use.

- other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory protection

Respiratory protection not required.

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	liquid
Colour	colourless
Odour	no odour is perceptible
Melting point/freezing point	>-2 – <8 °C (freezing point analysis)
Boiling point or initial boiling point and boiling range	no boilingpoint according to OECD103
Flammability	non-combustible
Lower and upper explosion limit	not determined
Flash point	200 °C (EU A.9)
Auto-ignition temperature	not determined
Decomposition temperature	418,2 °C (TGA onset)
pH (value)	3,51 (20 °C)

Solubility(ies)

Water solubility	>1 $^{g}/_{l}$ at 25 °C
Solubility in alcohol	>1 $^{g}/_{l}$ at 25 °C
Solubility in dimethylsulfoxide (DMSO)	>1 $^{g}/_{l}$ at 25 °C

Partition coefficient

Partition coefficient n-octanol/water (log value)	this information is not available

Vapour pressure	not determined

Density and/or relative density

Density	1,279 $^{g}/_{cm^3}$ at 20 °C
Relative vapour density	information on this property is not available

Particle characteristics	not relevant (liquid)

9.2 Other information

Information with regard to physical hazard classes	hazard classes acc. to GHS (physical hazards): not relevant

Other safety characteristics

Refractive index	1,412 (20 °C)

SECTION 10: Stability and reactivity

10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials".

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

Contact with acids possibly liberates toxic gas.

10.4 Conditions to avoid

Protect from moisture.

10.5 Incompatible materials

Acids

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

The classification for toxicity is based on tested substance.

Classification according to GHS (1272/2008/EC, CLP)

This substance does not meet the criteria for classification in accordance with Regulation No 1272/2008/EC.

Acute toxicity

Shall not be classified as acutely toxic. OECD 423.

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin. OECD 439.

Serious eye damage/eye irritation
Shall not be classified as seriously damaging to the eye or eye irritant. OECD 492.

Respiratory or skin sensitisation
Does not have a skin-sensitizing effect. OECD 429.

Germ cell mutagenicity
Shall not be classified as germ cell mutagenic. OECD 471.

Carcinogenicity
No data available.

Reproductive toxicity
No data available.

Specific target organ toxicity - single exposure
No data available.

Specific target organ toxicity - repeated exposure
No data available.

Aspiration hazard
Not applicable.

11.2 Information on other hazards
There is no additional information.

SECTION 12: Ecological information

12.1 Toxicity
Shall not be classified as hazardous to the aquatic environment.

Aquatic toxicity (acute)

Aquatic toxicity (acute)			
Endpoint	**Value**	**Species**	**Exposure time**
EC50	>100 $^{mg}/_{l}$	daphnia magna	48 h
EC50	38 $^{mg}/_{l}$	algae	72 h

12.2 Persistence and degradability
Not readily biodegradable.

Biodegradation
Poorly biodegradable.

Process of degradability		
Process	**Degradation rate**	**Time**
carbon dioxide generation	3,1 %	28 d

12.3 Bioaccumulative potential

Data are not available.

12.4 Mobility in soil

Data refer to dissociated substance.
Does not evaporate into the atmosphere - binding to solid soil phase is possible.

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Endocrine disrupting properties

Information on this property is not available.

12.7 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Dispose of contents/container to industrial combustion plant.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packagings

Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

SECTION 14: Transport information

14.1	UN number or ID number	Not subject to transport regulations
14.2	UN proper shipping name	Not assigned
14.3	Transport hazard class(es)	None
14.4	Packing group	Not assigned
14.5	Environmental hazards	Non-environmentally hazardous acc. to the dangerous goods regulations

14.6 Special precautions for user

There is no additional information.

14.7 Maritime transport in bulk according to IMO instruments

No data available.

Information for each of the UN Model Regulations

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN) - additional information

Not subject to ADR, RID and ADN.

International Maritime Dangerous Goods Code (IMDG) - additional information

Not subject to IMDG.

International Civil Aviation Organization (ICAO-IATA/DGR) - additional information

Not subject to ICAO-IATA.

SECTION 15: Regulatory information

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

Not relevant.

Additional information

Substance is listed in the following national inventories:
IECSC (China)
REACH (Europe)
TSCA
TDCA (Thailand)
AREC (South Korea)
VNECI (Vietnam)

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
DGR	Dangerous Goods Regulations (see IATA/DGR)
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
HS	Harmonized Commodity Description and Coding System (Harmonized System, drawn up by the World Customs Organisation)
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)

Abbr.	Descriptions of used abbreviations
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
IUPAC	International Union of Pure and Applied Chemistry
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures. Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU.

Disclaimer

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