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

1.1 Product identifier

· Trade name: 1-Butyl-3-methylimidazolium tetrafluoroborate, 98% [BMIM] [BF₄]
· Item number: 07-0170
· CAS Number: 174501-65-6

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

No further relevant information available.

1.3 Details of the supplier of the safety data sheet

· Manufacturer/Supplier:
  Strem Chemicals, Inc.
  7 Mulliken Way
  NEWBURYPORT, MA 01950
  USA
  info@strem.com

· Further information obtainable from: Technical Department

1.4 Emergency telephone number:

EMERGENCY: CHEMTREC: + 1 (800) 424-9300
During normal opening times: +1 (978) 499-1600

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

GHS07

Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2 H319 Causes serious eye irritation.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008
The substance is classified and labelled according to the CLP regulation.

Hazard pictograms

GHS07

· Signal word Warning

· Hazard statements
  H315 Causes skin irritation.
  H319 Causes serious eye irritation.

· Precautionary statements
  P101 If medical advice is needed, have product container or label at hand.
  P102 Keep out of reach of children.
  P103 Read label before use.
  P231 Handle under inert gas.
  P262 Do not get in eyes, on skin, or on clothing.
  P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  P403+P233 Store in a well-ventilated place. Keep container tightly closed.
Trade name: 1-Butyl-3-methylimidazolium tetrafluoroborate, 98% [BMIM] [BF₄]

P422 Store contents under inert gas.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other hazards
Results of PBT and vPvB assessment
· PBT: Not applicable.
· vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

3.1 Chemical characterisation: Substances
CAS No. Description
174501-65-6 1-Butyl-3-methylimidazolium tetrafluoroborate, 98% [BMIM] [BF₄]

SECTION 4: First aid measures

4.1 Description of first aid measures
· After inhalation: In case of unconsciousness place patient stably in side position for transportation.
· After skin contact: Immediately wash with water and soap and rinse thoroughly.
· After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· After swallowing: If symptoms persist consult doctor.

4.2 Most important symptoms and effects, both acute and delayed
No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed
No further relevant information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing agents:
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

5.2 Special hazards arising from the substance or mixture
No further relevant information available.

5.3 Advice for firefighters
Protective equipment: No special measures required.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Not required.

6.2 Environmental precautions
No special measures required.

6.3 Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.

6.4 Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
SECTION 7: Handling and storage

· 7.1 Precautions for safe handling
  Open and handle receptacle with care.

· Information about fire - and explosion protection:
  No special measures required.

· 7.2 Conditions for safe storage, including any incompatibilities

· Storage:
  · Requirements to be met by storerooms and receptacles:
    No special requirements.
  · Information about storage in one common storage facility:
    Not required.
  · Further information about storage conditions:
    Keep container tightly sealed.
    Store in cool, dry conditions in well sealed receptacles.

· 7.3 Specific end use(s)
  No further relevant information available.

SECTION 8: Exposure controls/personal protection

· Additional information about design of technical facilities:
  No further data; see item 7.

· 8.1 Control parameters
  · Ingredients with limit values that require monitoring at the workplace:
    Not required.
  · Additional information:
    The lists valid during the making were used as basis.

· 8.2 Exposure controls
  · Personal protective equipment:
    · General protective and hygienic measures:
      Keep away from foodstuffs, beverages and feed.
      Immediately remove all soiled and contaminated clothing.
      Wash hands before breaks and at the end of work.
      Avoid contact with the eyes and skin.
  · Respiratory protection:
    Not required.
  · Protection of hands:

  Protective gloves

  The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
  Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
  Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

  · Material of gloves
  The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

  · Penetration time of glove material
  The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

  · Eye protection:

  Tightly sealed goggles

(Contd. on page 4)
Safety data sheet
according to 1907/2006/EC, Article 31


Trade name: 1-Butyl-3-methylimidazolium tetrafluoroborate, 98% [BMIM] [BF₄]

9.1 Information on basic physical and chemical properties

General Information

Appearance:
- **Form:** Liquid
- **Colour:** Yellow
- **Odour:** Odourless
- **Odour threshold:** Not determined.

**pH-value:** Not determined.

Change in condition

- **Melting point/Melting range:** -75 °C
- **Boiling point/Boiling range:** no data °C

Flash point: Not applicable.

Flammability (solid, gaseous): Not determined.

Ignition temperature:

- **Decomposition temperature:** Not determined.
- **Self-igniting:** Not determined.
- **Danger of explosion:** Product does not present an explosion hazard.

Explosion limits:
- **Lower:** Not determined.
- **Upper:** Not determined.

Vapour pressure: not applicable hPa

Density at 20 °C:
- **1.21 g/cm³**

Relative density: Not determined.

Vapour density: Not determined.

Evaporation rate: Not determined.

Solubility in / Miscibility with water:
- Not miscible or difficult to mix.

Partition coefficient (n-octanol/water): Not determined.

Viscosity:
- Dynamic: Not determined.
- Kinematic: Not determined.

Solvent content:
- Organic solvents: 0.0 %
- VOC (EC): 0.00 %

9.2 Other information
- No further relevant information available.

SECTION 10: Stability and reactivity

10.1 Reactivity
- No further relevant information available.

10.2 Chemical stability

Thermal decomposition / conditions to be avoided:
- No decomposition if used according to specifications.

10.3 Possibility of hazardous reactions
- No dangerous reactions known.

10.4 Conditions to avoid
- No further relevant information available.

10.5 Incompatible materials:
- No further relevant information available.
Trade name: 1-Butyl-3-methylimidazolium tetrafluoroborate, 98% [BMIM] [BF₄]

· 10.6 Hazardous decomposition products: No dangerous decomposition products known.

SECTION 11: Toxicological information

· 11.1 Information on toxicological effects
  · Acute toxicity Based on available data, the classification criteria are not met.
  · Primary irritant effect:
    · Skin corrosion/irritation Causes skin irritation.
    · Serious eye damage/irritation Causes serious eye irritation.
  · Respiratory or skin sensitisation Based on available data, the classification criteria are not met.
  · CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
    · Germ cell mutagenicity Based on available data, the classification criteria are not met.
    · Carcinogenicity Based on available data, the classification criteria are not met.
    · Reproductive toxicity Based on available data, the classification criteria are not met.
    · STOT-single exposure Based on available data, the classification criteria are not met.
    · STOT-repeated exposure Based on available data, the classification criteria are not met.
    · Aspiration hazard Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

· 12.1 Toxicity
  · Aquatic toxicity: No further relevant information available.
  · 12.2 Persistence and degradability No further relevant information available.
  · 12.3 Bioaccumulative potential No further relevant information available.
  · 12.4 Mobility in soil No further relevant information available.
  · Additional ecological information:
    · General notes: Not known to be hazardous to water.
    · 12.5 Results of PBT and vPvB assessment
      · PBT: Not applicable.
      · vPvB: Not applicable.
  · 12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

· 13.1 Waste treatment methods
  · Recommendation Must not be disposed together with household garbage. Do not allow product to reach sewage system.
  · Uncleaned packaging:
    · Recommendation: Disposal must be made according to official regulations.

SECTION 14: Transport information

· 14.1 UN-Number
  · ADR, ADN, IMDG, IATA not regulated
· 14.2 UN proper shipping name
  · ADR, ADN, IMDG, IATA not regulated
### 14.3 Transport hazard class(es)
- **ADR, ADN, IMDG, IATA**
  - **Class** not regulated

### 14.4 Packing group
- **ADR, IMDG, IATA** not regulated

### 14.5 Environmental hazards:
- **Marine pollutant:** No

### 14.6 Special precautions for user
Not applicable.

### 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code
Not applicable.

### UN "Model Regulation":
not regulated

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- Directive 2012/18/EU
- **Named dangerous substances** - ANNEX I Substance is not listed.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing MSDS:** Technical Department.
- **Contact:** Technical Director
- **Abbreviations and acronyms:**
  - **ADR:** Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - **IMDG:** International Maritime Code for Dangerous Goods
  - **IATA:** International Air Transport Association
  - **GHS:** Globally Harmonised System of Classification and Labelling of Chemicals
  - **CAS:** Chemical Abstracts Service (division of the American Chemical Society)
  - **VOC:** Volatile Organic Compounds (USA, EU)
  - **PBT:** Persistent, Bioaccumulative and Toxic
  - **vPvB:** very Persistent and very Bioaccumulative
  - **Skin Irrit. 2:** Skin corrosion/irritation, Hazard Category 2
  - **Eye Irrit. 2:** Serious eye damage/eye irritation, Hazard Category 2