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

1.1 Product identifier
Trade name: 1-Butyl-1-methylpyrrolidinium trifluoromethanesulfonate 99%
Article number: PYR0405C
CAS Number: 367522-96-1
EC number: 663-158-5

1.2 Relevant identified uses of the substance or mixture and uses advised against
No other important information available.

Application of the substance / the mixture
This product is intended for the exclusive use of Research and Development

1.3 Details of the supplier of the safety data sheet
Manufacturer/Supplier:
Solvionic SA
195 route d’Espagne
31036 TOULOUSE
FRANCE
Phone number: +33 (0)5.34.63.35.35
Further information obtainable from: HSE Department

1.4 Emergency telephone number:
ORFILA (INRS): +33 (0)1.45.42.59.59
CCHST: 1-800-668-4284 (Canada & U.S.A)

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
P264 Wash thoroughly after handling.
P380 Wear protective gloves / eye protection / face protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321 Specific treatment (see on this label).
P332+P313 If skin irritation occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.

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
367522-96-1 1-Butyl-1-methylpyrrolidinium trifluoromethanesulfonate

(Contd. on page 2)
Trade name: 1-Butyl-1-methylpyrrolidinium trifluoromethanesulfonate 99%

(Contd. of page 1)

- Identification number(s)
  EC number: 663-158-5
  Molecular formula: C10 H20 F3 N O 3 S
  Molnar mass: 291.33 g/mol

- Dangerous components:
  CAS: 367522-96-1  EC number: 663-158-5
  1-Butyl-1-methylpyrrolidinium trifluoromethanesulfonate
  Skin Irrit. 2, H315; Eye Irrit. 2, H319; 99%

  CAS: 120-94-5
  EINECS: 204-438-5
  1-methylpyrrolidine
  Flam. Liq. 2, H225; Acute Tox. 3, H301; Skin Corr. 1A, H314; Aquatic Chronic 2, H411; ≤ 0.3%

SECTION 4: First aid measures

4.1 Description of first aid measures
- General information: Immediately remove any clothing soiled by the product.
- 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: Call for a doctor immediately.

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: Use fire extinguishing methods suitable to surrounding conditions.

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 Use individual protective gear.

6.2 Environmental precautions: Do not allow to enter sewers/ surface or ground water.

6.3 Methods and material for containment and cleaning up: Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

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 No special precautions are necessary if used correctly.
- 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.

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.
48.1.23 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
  - Body protection: Use protective suit.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties
- General Information
  - Appearance:
    Form: Fluid
    Colour: Colorless to yellow
    Odour: Not determined.
    Odour threshold: Not determined.
  - pH-value: Not determined.
- Change in condition
  - Melting point/freezing point: Undetermined.
  - Initial boiling point and boiling range: Undetermined.
- Flash point: Not applicable.
- Flammability (solid, gas): Not applicable.
- Decomposition temperature: Not determined.
- Auto-ignition temperature: Not determined.
- Explosive properties:
  - Explosive properties: Product does not present an explosion hazard.
- Explosion limits:
  - Lower: Not determined.
  - Upper: Not determined.
- Vapour pressure:
  - Not determined.
- Density at 20 °C:
  - 1,256 g/cm³
  - Bulk density: 1,256 kg/m³
  - 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 at 20 °C: 221.7 mPas
    - Kinematic: Not determined.
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:
Strong oxidizer and strong base.

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 (carcinogenity, 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.

- Specific target organ toxicity - single exposure
  Based on available data, the classification criteria are not met.

- Specific target organ toxicity - 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:
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.

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.
SECTION 14: Transport information

14.1 UN-Number
ADR/RID/ADN, ADN, IMDG, IATA not regulated

14.2 UN proper shipping name
ADR/RID/ADN, ADN, IMDG, IATA not regulated

14.3 Transport hazard class(es)
ADR/RID/ADN, ADN, IMDG, IATA Class not regulated

14.4 Packing group
ADR/RID/ADN, IMDG, IATA not regulated

14.5 Environmental hazards:
Not applicable.

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.
REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

15.2 Chemical safety assessment:
For this product, no chemical safety assessment has been performed.
A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

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.

For research and development use only.

Relevant phrases
H225 Highly flammable liquid and vapour.
H301 Toxic if swallowed.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H411 Toxic to aquatic life with long lasting effects.

Department issuing SDS: Environmental Protection Service

Contact:
Mail: hse@solvionic.com
Phone number: +33 (0)5.34.63.35.35

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
EINECS: European Inventory of Existing Commercial Chemical Substances

(Contd. on page 6)
Trade name: 1-Butyl-1-methylpyrrolidinium trifluoromethanesulfonate 99%

<table>
<thead>
<tr>
<th>ELINCS: European List of Notified Chemical Substances</th>
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<tbody>
<tr>
<td>CAS: Chemical Abstracts Service (division of the American Chemical Society)</td>
</tr>
<tr>
<td>VOC: Volatile Organic Compounds (USA, EU)</td>
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<tr>
<td>PBT: Persistent, Bioaccumulative and Toxic</td>
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<tr>
<td>vPvB: very Persistent and very Bioaccumulative</td>
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<tr>
<td>Flam. Liq. 2: Flammable liquids – Category 2</td>
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<td>Acute Tox. 3: Acute toxicity – Category 3</td>
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<td>Acute Tox. 4: Acute toxicity – Category 4</td>
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<td>Skin Corr. 1A: Skin corrosion/irritation – Category 1A</td>
</tr>
<tr>
<td>Skin Irrit. 2: Skin corrosion/irritation – Category 2</td>
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<tr>
<td>Eye Irrit. 2: Serious eye damage/eye irritation – Category 2</td>
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<tr>
<td>Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2</td>
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