1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifier

   Product name : N-Formyl-Met-Leu-Phe
   Catalog No. : HY-P0224
   CAS No. : 59880-97-6

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

   Identified uses : Laboratory chemicals, manufacture of substances.

1.3 Details of the supplier of the safety data sheet

   Company: MedChemExpress USA
   Tel: 609-228-6898
   Fax: 609-228-5909
   E-mail: sales@medchemexpress.com

1.4 Emergency telephone number

   Emergency Phone #: 609-228-6898

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

   Not a hazardous substance or mixture.

2.2 GHS Label elements, including precautionary statements

   Not a hazardous substance or mixture.

2.3 Other hazards

   None.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

   Synonyms: fMLP;N-Formyl-MLF
   Formula: C21H31N3O5S
   Molecular Weight: 437.55
   CAS No. : 59880-97-6

4. FIRST AID MEASURES

4.1 Description of first aid measures

   Eye contact
   Remove any contact lenses, locate eye-wash station, and flush eyes immediately with large amounts of water. Separate eyelids with fingers to ensure adequate flushing. Promptly call a physician.

   Skin contact
Rinse skin thoroughly with large amounts of water. Remove contaminated clothing and shoes and call a physician.

**Inhalation**
Immediately relocate self or casualty to fresh air. If breathing is difficult, give cardiopulmonary resuscitation (CPR). Avoid mouth-to-mouth resuscitation.

**Ingestion**
Wash out mouth with water; Do NOT induce vomiting; call a physician.

4.2 **Most important symptoms and effects, both acute and delayed**
The most important known symptoms and effects are described in the labelling (see section 2.2).

4.3 **Indication of any immediate medical attention and special treatment needed**
Treat symptomatically.

5. **FIRE FIGHTING MEASURES**

5.1 **Extinguishing media**
- **Suitable extinguishing media**
  Use water spray, dry chemical, foam, and carbon dioxide fire extinguisher.

5.2 **Special hazards arising from the substance or mixture**
During combustion, may emit irritant fumes.

5.3 **Advice for firefighters**
- Wear self-contained breathing apparatus and protective clothing.

6. **ACCIDENTAL RELEASE MEASURES**

6.1 **Personal precautions, protective equipment and emergency procedures**
- Use full personal protective equipment. Avoid breathing vapors, mist, dust or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
- Refer to protective measures listed in sections 8.

6.2 **Environmental precautions**
Try to prevent further leakage or spillage. Keep the product away from drains or water courses.

6.3 **Methods and materials for containment and cleaning up**
- Absorb solutions with finely-powdered liquid-binding material (diatomite, universal binders); Decontaminate surfaces and equipment by scrubbing with alcohol; Dispose of contaminated material according to Section 13.

7. **HANDLING AND STORAGE**

7.1 **Precautions for safe handling**
Avoid inhalation, contact with eyes and skin. Avoid dust and aerosol formation. Use only in areas with appropriate exhaust ventilation.

7.2 **Conditions for safe storage, including any incompatibilities**
- Keep container tightly sealed in cool, well-ventilated area. Keep away from direct sunlight and sources of ignition.
- **Recommended storage temperature:**
  - **Powder**
    - -80°C: 2 years
    - -20°C: 1 year
  - **In solvent**
    - -80°C: 6 months
    - -20°C: 1 month

7.3 **Specific end use(s)**
No data available.

8. **EXPOSURE CONTROLS/PERSONAL PROTECTION**
8.1 Control parameters

Components with workplace control parameters
This product contains no substances with occupational exposure limit values.

8.2 Exposure controls

Engineering controls
Ensure adequate ventilation. Provide accessible safety shower and eye wash station.

Personal protective equipment

<table>
<thead>
<tr>
<th>Protection</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye protection</td>
<td>Safety goggles with side-shields.</td>
</tr>
<tr>
<td>Hand protection</td>
<td>Protective gloves.</td>
</tr>
<tr>
<td>Skin and body protection</td>
<td>Impervious clothing.</td>
</tr>
<tr>
<td>Respiratory protection</td>
<td>Suitable respirator.</td>
</tr>
<tr>
<td>Environmental exposure controls</td>
<td>Keep the product away from drains, water courses or the soil. Clean spillages in a safe way as soon as possible.</td>
</tr>
</tbody>
</table>

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>White to off-white (Solid)</td>
</tr>
<tr>
<td>Odor</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point/range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>No data available</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No data available</td>
</tr>
</tbody>
</table>

9.2 Other safety information
No data available.

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available.

10.2 Chemical stability
Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions
   No data available.

10.4 Conditions to avoid
   No data available.

10.5 Incompatible materials
   Strong acids/alkalis, strong oxidising/reducing agents.

10.6 Hazardous decomposition products
   Under fire conditions, may decompose and emit toxic fumes.
   Other decomposition products - no data available.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects
   Acute toxicity
   Classified based on available data. For more details, see section 2
   Skin corrosion/irritation
   Classified based on available data. For more details, see section 2
   Serious eye damage/irritation
   Classified based on available data. For more details, see section 2
   Respiratory or skin sensitization
   Classified based on available data. For more details, see section 2
   Germ cell mutagenicity
   Classified based on available data. For more details, see section 2
   Carcinogenicity
   IARC: No component of this product present at a level equal to or greater than 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
   ACGIH: No component of this product present at a level equal to or greater than 0.1% is identified as a potential or confirmed carcinogen by ACGIH.
   NTP: No component of this product present at a level equal to or greater than 0.1% is identified as a anticipated or confirmed carcinogen by NTP.
   OSHA: No component of this product present at a level equal to or greater than 0.1% is identified as a potential or confirmed carcinogen by OSHA.
   Reproductive toxicity
   Classified based on available data. For more details, see section 2
   Specific target organ toxicity - single exposure
   Classified based on available data. For more details, see section 2
   Specific target organ toxicity - repeated exposure
   Classified based on available data. For more details, see section 2
   Aspiration hazard
   Classified based on available data. For more details, see section 2
   Additional information
   n-Formyl peptides have been reported to be leukocyte chemoattractants which direct the migration of cells. This process appears to be an important mechanism by which immune effector cells localize at inflammation sites.
   This information is based on our current knowledge. However the chemical, physical, and toxicological properties have not been completely investigated.

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12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available.

12.2 Persistence and degradability
No data available.

12.3 Bioaccumulative potential
No data available.

12.4 Mobility in soil
No data available.

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment unavailable as chemical safety assessment not required or not conducted.

12.6 Other adverse effects
No data available.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Product
Dispose substance in accordance with prevailing country, federal, state and local regulations.

Contaminated packaging
Conduct recycling or disposal in accordance with prevailing country, federal, state and local regulations.

14. TRANSPORT INFORMATION

DOT (US)
This substance is considered to be non-hazardous for transport.

IMDG
This substance is considered to be non-hazardous for transport.

IATA
This substance is considered to be non-hazardous for transport.

15. REGULATORY INFORMATION

SARA 302 Components:
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components:
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards:
No SARA Hazards.

Massachusetts Right To Know Components:
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components:
No components are subject to the Pennsylvania Right to Know Act.
New Jersey Right To Know Components:
No components are subject to the New Jersey Right to Know Act.

California Prop. 65 Components:
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Copyright 2019 MedChemExpress. The above information is correct to the best of our present knowledge but does not purport to be all inclusive and should be used only as a guide. The product is for research use only and for experienced personnel. It must only be handled by suitably qualified experienced scientists in appropriately equipped and authorized facilities. The burden of safe use of this material rests entirely with the user. MedChemExpress disclaims all liability for any damage resulting from handling or from contact with this product.