Section 1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Product Name: FPRM11
Contains Undecane

1.2. Relevant identified uses of the substance or mixture and uses advised against
Recommended Use: Flash point testing equipment performance verification reference material
Uses advised against: No information available

1.3. Details of the supplier of the safety data sheet
Supplier: Cannon Instrument Company
2139 High Tech Rd.
State College, PA 16803-1733
TEL: (814) 353-8000; (800) 676-6232
For further information, please contact
E-mail Address: No information available.

1.4. Emergency telephone number
Emergency Telephone Number:
(800) 255-3924 Domestic CHEM-TEL Inc.
+1 (813) 248-0585 Overseas CHEM-TEL Inc. (Please Call Collect)
Europe: 112

Section 2. Hazards identification

2.1. Classification of the substance or mixture
REGULATION (EC) No 1272/2008
Aspiration Toxicity: Category 1
Skin Corrosion/Irritation: Category 2
Serious Eye Damage/Eye Irritation: Category 2

Physical Hazards
None

2.2. Label Elements

Signal Word: Danger

Hazard Statements
H304 - May be fatal if swallowed and enters airways
H315 - Causes skin irritation
H319 - Causes serious eye irritation
Precautionary Statements - EU (§28, 1272/2008)
P280 - Wear protective gloves/ eye protection/ face protection
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician
P331 - Do NOT induce vomiting

2.3. Other information
Prolonged skin contact may defat the skin and produce dermatitis. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

Section 3. Composition/information on ingredients

3.1. Substances
3.2. Mixtures

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>EC-No</th>
<th>CAS-No</th>
<th>Weight %</th>
<th>EU - GHS Substance Classification</th>
<th>REACH No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undecane</td>
<td>214-300-6</td>
<td>1120-21-4</td>
<td>100</td>
<td>Asp. Tox. 1 (H304) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319)</td>
<td>No data available</td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16

Section 4. First aid measures

4.1. Description of first-aid measures

Eye Contact
Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Obtain medical attention if irritation persists.

Skin Contact
Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention if irritation develops and persists.

Ingestion
Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Drink plenty of water. Get medical attention.

Inhalation
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention immediately if symptoms occur. Artificial respiration and/or oxygen may be necessary. If breathing has stopped, contact emergency medical services immediately.

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

Most Important Symptoms/Effects

4.3. Indication of immediate medical attention and special treatment needed

Notes to Physician
Aspiration hazard.

Section 5. Fire-fighting measures

5.1. Extinguishing media

Suitable Extinguishing Media

Extinguishing media which must not be used for safety reasons
No information available.

5.2. Special hazards arising from the substance or mixture
Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases
During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic
and/or irritating. Combustion products may include and are not limited to: Carbon monoxide, Carbon dioxide.

5.3. Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Section 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Remove all sources of ignition. Avoid contact with skin, eyes and clothing. Use personal protective equipment.

6.2. Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

6.3. Methods and materials for containment and cleaning up
Dike to collect large liquid spills. Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13).

Clean contaminated surface thoroughly.

6.4. Reference to other sections
See Section 12 for additional information.

Section 7. Handling and storage

7.1. Precautions for Safe Handling
Handling
Keep away from open flames, hot surfaces and sources of ignition. Avoid contact with skin, eyes and clothing. Wear personal protective equipment.

Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

7.2. Conditions for safe storage, including any incompatibilities
Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition.

7.3. Specific end use(s)
Exposure Scenario
No information available.

Other Guidelines
No information available.

Section 8. Exposure controls/personal protection

8.1. Control parameters

Exposure Limits

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Finland</th>
<th>France</th>
<th>Germany</th>
<th>Gibraltar</th>
<th>Greece</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undecane 1120-21-4</td>
<td>TWA: 1000 mg/m³</td>
<td>STEL: 1500 mg/m³</td>
<td>TWA: 40 ppm</td>
<td>TWA: 275 mg/m³</td>
<td>STEL: 40 ppm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>The Netherlands</th>
<th>Norway</th>
<th>Poland</th>
<th>Portugal</th>
<th>Spain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undecane 1120-21-4</td>
<td>TWA: 40 ppm</td>
<td>TWA: 275 mg/m³</td>
<td>STEL: 40 ppm</td>
<td>STEL: 275 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>
Biological occupational exposure limits
This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Derived No Effect Level
No information available.

Predicted No Effect Concentration (PNEC)
No information available.

8.2. Exposure controls

Engineering Measures
Ensure adequate ventilation, especially in confined areas.

Personal protective equipment
Personal protection equipment should be chosen according to the CEN standards

Eye Protection
Safety glasses with side-shields. If splashes are likely to occur, wear: Goggles.

Skin and Body Protection
Impervious gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Hand Protection
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Environmental Exposure Controls
No information available.

Section 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Liquid</th>
<th>Appearance</th>
<th>Colorless</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odor</td>
<td>Hydrocarbon-like</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks/ - Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Melting Point/Range</td>
<td>-10 °C</td>
<td>None known</td>
</tr>
<tr>
<td>Boiling Point/Boiling Range</td>
<td>196 °C</td>
<td>None known</td>
</tr>
<tr>
<td>Flash Point</td>
<td>65 °C</td>
<td>Closed cup</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Flammability Limits in Air</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Relative Density</td>
<td>No data available 0.74</td>
<td>None known</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Insoluble in water</td>
<td>None known</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>Soluble in solvents.</td>
<td>None known</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Viscosity</td>
<td>1.5 cSt @ 20°C</td>
<td>None known</td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Oxidizing Properties</td>
<td>No information available</td>
<td></td>
</tr>
</tbody>
</table>

9.2. Other information

VOC Content (%)
No information available

Section 10. Stability and reactivity

10.1. Reactivity
Not reactive under normal conditions.

10.2. Chemical stability
10.3. Possibility of hazardous reactions

10.4. Conditions to avoid
Ignitions sources - heat, sparks and open flames.

10.5. Incompatible materials

10.6. Hazardous decomposition products
Carbon oxides.

Section 11. Toxicological information

11.1. Information on toxicological effects

Acute Toxicity
Product Information
Inhalation
May cause irritation of respiratory tract. May cause central nervous system depression with nausea, headache, dizziness, vomiting, and incoordination.

Eye Contact
Contact with eyes may cause irritation.

Skin Contact
May cause skin irritation and/or dermatitis. Prolonged skin contact may defat the skin and produce dermatitis.

Ingestion
Potential for aspiration if swallowed. Aspiration may cause pulmonary edema and pneumonitis. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause central nervous system depression.

Acute Toxicity 100% of the mixture consists of ingredient(s) of unknown toxicity.

The following values are calculated based on chapter 3.1 of the GHS document:
LD50 Oral 99,999.00 mg/kg
LD50 Dermal 99,999.00 mg/kg
Gas 99,999.00 mg/L
Dust/Mist 99,999.00 mg/L
Vapor 99,999.00 mg/L

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undecane</td>
<td></td>
<td></td>
<td>&gt; 2.82 mg/L (Rat) 8 h &gt; 442 ppm (Rat) 8 h</td>
</tr>
</tbody>
</table>

Sensitization No information available.
Mutagenic Effects No information available.
Carcinogenic Effects No information available.

Reproductive Toxicity No information available.
Developmental Toxicity No information available.
STOT - single exposure See listed target organs below.
STOT - repeated exposure See listed target organs below.

Neurological Effects Repeated or prolonged overexposure to solvents may cause permanent damage to the nervous system. Intentional misuse by deliberately concentrating and inhaling contents may be harmful or fatal.

Aspiration Hazard May be fatal if swallowed and enters airways.

Section 12. Ecological information

12.1. Toxicity

Ecotoxicity Effects
Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Toxicity to Algae</th>
<th>Toxicity to Fish</th>
<th>Toxicity to Daphnia Magna (Water)</th>
</tr>
</thead>
</table>
12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

No information available.

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

No information available.

12.6. Other adverse effects

This product does not contain any known or suspected endocrine disruptors.

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Section 13. Disposal considerations

13.1. Waste treatment methods

| Waste from Residues / Unused Products | Dispose of in accordance with local regulations. |
| Contaminated Packaging | Empty containers should be taken to an approved waste handling site for recycling or disposal. |

---

Section 14. Transport information

Note: The information provided below may not apply to all shipping situations. Consult appropriate Dangerous Goods Regulations for additional requirements and mode-specific, material-specific, or quantity-specific shipping requirements.

IMDG/IMO

| 14.1. UN-Number | UN2330 |
| 14.2. Proper Shipping Name | Undecane |
| 14.3. Hazard Class | 3 (III) |
| 14.4. Packing Group Description | UN2330, Undecane, 3, III |
| 14.5. Marine Pollutant | None |
| 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | No information available. |

RID

| 14.1. UN-Number | UN2330 |
| 14.2. Proper Shipping Name | Undecane |
| 14.3. Hazard Class | 3 (III) |
| 14.4. Packing Group Description | UN2330, Undecane, 3, III |
| 14.5. Environmental hazard | None |
| 14.6. Special Provisions | None |
ADR
14.1. UN-Number
UN2330
14.2. Proper Shipping Name
Undecane
14.3. Hazard Class
3
14.4. Packing Group
III
Description
UN2330, Undecane, 3, III, (D/E)
14.5. Environmental hazard
None
None

ICAO
14.1. UN-Number
UN2330
14.2. Proper shipping name
Undecane
14.3. Hazard Class
3
14.4. Packing Group
III
Description
UN2330, Undecane, 3, III
14.5. Environmental hazard
None
None

IATA
14.1. UN-Number
UN2330
14.2. Proper Shipping Name
Undecane
14.3. Hazard Class
3
14.4. Packing Group
III
Description
UN2330, Undecane, 3, III
14.5. Environmental hazard
None
None

ERG Code
3L

Section 15. Regulatory information

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

International Inventories

TSCA
Complies
EINECS/ELINCS
Complies
DSL/NDSL
Complies
PICCS
Complies
ENCS
Complies
IECSC
Complies
AICS
Complies
KECL
Complies

Legend
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
PICCS - Philippines Inventory of Chemicals and Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
AICS - Australian Inventory of Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances

15.2. Chemical Safety Assessment
No information available

Section 16. Other information

Full text of H-Statements referred to under sections 2 and 3
H304 - May be fatal if swallowed and enters airways
H315 - Causes skin irritation
H319 - Causes serious eye irritation

Key literature references and sources for data
www.ChemADVISOR.com/

Issuing Date 24-Apr-2014
Revision Date 29-Aug-2017
Revision Note (M)SDS sections updated: 3, 8.


General Disclaimer
The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of Safety Data Sheet