1. Substance/Company Identification

PRODUCT NAME: ULVAC R-2 Rotary Vacuum Pump Oil
CAS NUMBER: 68037-01-4
DISTRIBUTOR: ULVAC Technologies, Inc.
401 Griffin Brook Drive
Methuen, MA 01844
(978) 686-7550

2. Composition/Ingredients

GENERIC NAME: 100% Synthetic Aliphatic Hydrocarbon
CHEMICAL FORMULA: (CH2)n 20 <= n <= 40
HAZARDOUS INGREDIENTS: None

3. Hazards Identification

POSSIBLE ENTRY ROUTES: Ingestion, inhalation of oil mists
This product is not classified as hazardous.
ACUTE EFFECTS: Ingestion: non-toxic, Eyes: not an irritant, Skin: Not a Primary irritant or corrosive, Inhalation: Non-hazardous in normal use
CHRONIC EFFECTS: Unknown.

4. First Aid Measures

SKIN: Wash with soap and water.
EYES: Flush with water. Contact a physician!
INGESTION: Give liquids (except fruit juice) if victim is conscious, do not ingest sodium bicarbonate, or vinegar. Do not induce vomiting. Contact a physician. Small amounts in mouth may be washed out.

5. Fire Fighting Measures

FLASH POINT: 240 C
METHOD USED: Cleveland Open Cup
EXPLOSIVE LIMITS LOWER: Unknown UPPER: Unknown
EXTINGUISHING MEDIA: Water fog, chemical foam or carbon dioxide. NFPA Class III B Material.
SPECIAL FIREFIGHTING PROCEDURES: Wear breathing gear when fighting fires in enclosed spaces; incomplete combustion of this material produces carbon monoxide!
UNUSUAL FIRE AND/OR EXPLOSION HAZARDS: Firefighters should wear self-contained breathing apparatus in the positive-pressure mode with a full face piece when there is a possibility of exposure to smoke, fumes or hazardous decomposition products.

6. Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN EVENT OF RELEASE: Small spills may be wiped up with a rag. Large spills should be picked up immediately with an absorbent.

7. Handling and Storage

HANDLING: None known
STORAGE: None known

8. Exposure Controls/Personal Protection

ENGINEERING CONTROL MEASURES: None required
RESPIRATORY PROTECTION: See notes on ventilation below.
PROTECTIVE GLOVES: Yes - made of oil-impermeable rubber
SAFETY GLASSES/GOGGLES: Yes - glasses should have side shields
OTHER PROTECTIVE EQUIPMENT: None should be required under normal use.
9. Physical & Chemical Properties

PHYSICAL STATE: Liquid
VAPOR PRESSURE: < 5x10^{-3} Torr @ 25°C
BOILING POINT: 455°C
EVAPORATION RATE (ether = 1): Nil
VAPOR DENSITY: approximately 14
WT % VOLATILES: Nil
SPECIFIC GRAVITY: 0.83
VIScosity: 20 cSt @ 40°C
SOLUBILITY IN WATER: Nil
APPEARANCE: Colorless liquid with no odor

10. Stability & Reactivity

STABILITY: Material is stable
CONDITIONS TO AVOID: Continuous exposure to temperatures > 200°C
INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizers
HAZARDOUS DECOMPOSITION PRODUCTS: Incomplete combustion may produce carbon monoxide.
HAZARDOUS POLYMERIZATION: None likely

11. Toxicological Information

ACUTE ORAL LD50 (mg/kg): greater than 5.0g/kg (rats) The material is not classified as toxic by oral administration as defined in 16 CFR 1500.
ACUTE DERMAL: The primary irritation index was found to be 0.5 (scale 0-8) based on erythema and edema. No evidence of tissue damage was found. The material is not classified as a primary irritant or as a corrosive by dermal application as defined by 16 CFR 1500.
ACUTE INHALATION LD50 (mg/l): 4.68 (rats) for 1 hour. Would be difficult to work in this heavy mist. May be considered non-hazardous, by inhalation, for all practical purposes.

12. Ecological Information

ENVIRONMENTAL: When used and/or disposed of as indicated, no adverse environmental effects are foreseen.
MOBILITY: Non-volatile and insoluble in water.
DEGRADABILITY: Slowly biodegradable in aerobic conditions.

13. Disposal Considerations

Product and packaging must be disposed of in accordance with Federal, State and local regulations.

14. Transport Classification

Not classified as hazardous for transport by air, sea or road.

15. Regulatory Information

None

16. Other Information

<table>
<thead>
<tr>
<th>NFPA RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLAMMABILITY</td>
</tr>
<tr>
<td>HEALTH HAZARD</td>
</tr>
<tr>
<td>REACTIVITY</td>
</tr>
<tr>
<td>SPECIAL HAZARD</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>0</td>
</tr>
<tr>
<td>0</td>
</tr>
<tr>
<td>NONE</td>
</tr>
</tbody>
</table>