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## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING


- 1) Product identifier: N-Par 134-1
- 2) Relevant identified uses of the substance or mixture and uses advised against:
  - Alkyl manufacturing raw materials
- 3) Manufacture/Supplier/Distributor information:
  - Manufacture information:
    - Company name: ISU CHEMICAL CO., LTD
    - Address: 8, Seokdang-gil, Onsan-eup, Ulju-gun, Ulsan, Korea
    - Emergency telephone number: Tel. 052-231-5587 Fax. 052-231-5566

## 2. HAZARD IDENTIFICATION

- 1) Hazard classification: Aspiration hazard: Cat.1
- 2) Allocation label elements including precautionary statements:
  - Hazard pictograms
  - Signal word: Danger
  - Hazard statements:
    - H304: May be fatal if swallowed and enters airways.
  - Precautionary statements:
    - Response:
      - P331: Do not induce vomiting.
      - P301+310: IF SWALLOWED: Immediately call a POISON CENTER/doctor.
    - Storage:
      - P405: Store locked up.
    - Disposal:
      - P501: Dispose of contents/container to (in accordance with local/regional/national/International regulations.)
- 3) Other hazards:
  - EUH066: Repeated exposure may cause skin dryness or cracking

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	Common name	CAS number or identification number	Concentration (wt%)
Alkanes, C13-14	Hydrocarbons, C13-C14, n-alkanes, <2% aromatics	EC No. 939-519-0	≥ 98.5

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#### 4. FIRST AID MEASURES

- 1) Following eye contact:
  - Flush thoroughly with water.
  - If irritation occurs, get medical assistance.
- 2) Following skin contact:
  - Wash contact areas with soap and water.
  - Remove contaminated clothing.
  - Launder contaminated clothing before reuse
- 3) Following inhalation:
  - Remove from further exposure.
  - For those providing assistance, avoid exposure to yourself or others.
  - Use adequate respiratory protection.
  - If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance.
  - If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.
- 4) Following ingestion:
  - Seek immediate medical attention.
  - Do not induce vomiting
- 5) Advice to physician:
  - If ingested, material may be aspirated into the lungs and cause chemical pneumonitis.
  - Treat appropriately.

#### 5. FIRE FIGHTING MEASURES

- 1) Suitable (and unsuitable) extinguishing media:
  - Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish flames.
  - Inappropriate Extinguishing Media: Straight streams of water
- 2) Special hazards arising from the substance or mixture:
  - Unusual Fire Hazards: Combustible, Hazardous material.
  - Hazardous Combustion Products: Smoke, Fume, Incomplete combustion products, Oxides of carbon
- 3) Special protective equipment for firefighters:
  - Fire Fighting Instructions: Evacuate area.
  - Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply.
  - Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA).

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– Use water spray to cool fire exposed surfaces and to protect personnel.

## 6. ACCIDENTAL RELEASE MEASURES

### 1) Health considerations and protective equipment:

- In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.
- Avoid contact with spilled material.
- Warn or evacuate occupants in surrounding and downwind areas if required, due to toxicity or flammability of the material

### 2) Environmental precautions:

- Land Spill:
  - Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area).
  - Stop leak if you can do so without risk.
  - All equipment used when handling the product must be grounded.
  - Do not touch or walk through spilled material.
- Water Spill
  - Stop leak if you can do so without risk.
  - Warn other shipping.
- Large Spills:
  - Dyke far ahead of liquid spill for later recovery and disposal.
  - Prevent entry into waterways, sewers, basements or confined areas.


### 3) For cleaning up:

- Land Spill:
  - A vapour-suppressing foam may be used to reduce vapour.
  - Use clean non-sparking tools to collect absorbed material.
  - Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
  - Water spray may reduce vapour, but may not prevent ignition in enclosed spaces.
  - Recover by pumping or with suitable absorbent
- Water Spill
  - Remove from the surface by skimming or with suitable absorbents.
  - Seek the advice of a specialist before using dispersants.

## 7. HANDLING AND STORAGE

### 1) Precautions for safe handling:

- Avoid contact with skin.
- Prevent small spills and leakage to avoid slip hazard.

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- Material can accumulate static charges which may cause an electrical spark (ignition source).
- Use proper bonding and/or earthing procedures.
- When the material is handled in bulk, an electrical spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations).
- bonding and earthing may not eliminate the hazard from static accumulation.
- Consult local applicable standards for guidance.
- Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics – Code of practice for the avoidance of hazards due to static electricity).
- Loading/Unloading Temperature: [Ambient]

○ Static Accumulator:

- This material is a static accumulator.
- A liquid is typically considered a nonconductive, static accumulator if its conductivity is below 100 pS/m (100x10E-12 Siemens per meter) and is considered a semiconductive, static accumulator if its conductivity is below 10,000 pS/m.
- Whether a liquid is nonconductive or semiconductive, the precautions are the same.
- A number of factors, for example liquid temperature, presence of contaminants, anti-static additives and filtration can greatly influence the conductivity of a liquid.

2) Conditions for safe storage (including any incompatibilities):

- The container choice, for example storage vessel, may effect static accumulation and dissipation.
- Keep container closed.
- Handle containers with care.
- Open slowly in order to control possible pressure release.
- Store in a cool, well-ventilated area.
- Fixed storage containers, transfer containers and associated equipment should be earthed and bonded to prevent accumulation of static charge.
- Storage Temperature: [Ambient]
- Storage Pressure: [Ambient]
- Suitable Materials and Coatings (Chemical Compatibility): Carbon Steel; Stainless Steel; Polyethylene; Polypropylene; Polyester; Teflon
- Unsuitable Materials and Coatings: Natural Rubber; Butyl Rubber; Polystyrene; Ethylene-propylene-diene monomer (EPDM)

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## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

1) Chemical exposure limits, Biological exposure standard:

Components	Occupational exposure limits (Domestic)	ACGIH	Biological limit values
Alkanes, C13-14	No data available	Not applicable	No data available

2) Appropriate engineering controls: No data available

3) Personal protection equipment:


○ Respiratory protection:

- Wear respiratory protective equipment certified by Korea Occupational Safety & Health Agency according to the physical and chemical properties of the gas / liquid exposed.
- For gas / liquid substances the following respiratory protection is recommended:
  - Isolated full face gas mask (for organic compounds (if acid gas, acid gas))
  - Isolation type half-gas mask (for organic compound (for acid gas, acid gas))
  - Direct type full face gas mask (for organic compounds (for acid gas, for acid gas))
  - The half- gas mask (for organic compounds (for acid gas, for acid gas))
  - lectric Gas Mask
- In case of lack of oxygen (<19.5%), wear breathing mask or self-contained breathing apparatus.

○ Eye protection: Safety glasses, Face-shield

○ Hand protection:

- The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other.
- Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.
- take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.
- Be aware that in daily use the durability of a chemical resistant protective glove can be notably shorter than the break through time measured according to EN 374, due to the numerous outside influences (e.g.temperature).
- gloves suitable for permanent contact:
  - Material: Fluorinated rubber
  - Break through time:  $\geq 480$  min
  - Layer thickness: 0.4 mm
- gloves suitable for splash protection:
  - Material: Nitrile rubber/nitrile latex
  - Break through time:  $\geq 240$  min
  - Layer thickness: 0.35 mm
- unsuitable gloves

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- Material: Natural rubber/natural latex, Polychloroprene, butyl-rubber, Polyvinylchloride
- Body protection: Wear proper protective clothing considering the physical and chemical properties of the chemical.

## 9. PHYSICAL AND CHEMICAL PROPERTIES


- 1) Appearance(Physical state, color, etc): Liquid (100%) @ 20°C and 1013 hPa
- 2) Odour: Odourless
- 3) Odor threshold: No data available
- 4) pH: No data available
- 5) Melting point/freezing point: -2 °C @ 101.325 kPa
- 6) Initial boiling point and boiling range: 220 – 250 °C @ 101.325 kPa
- 7) Flash point: 93.8 °C @ 102.3 kPa
- 8) Evaporation rate: No data available
- 9) Flammability(solid, gas): not applicable (liquid)
- 10) Upper/lower flammability or explosive limits: No data available
- 11) Vapour pressure: 5 – 36.5 Pa @ 20 – 50 °C
- 12) Solubility(ies): 1 mg/L @ 20 °C
- 13) Vapour density: > 1
- 14) Relative density: 0.758 @ 20 °C
- 15) n-octanol/water partition coefficient: 5.15 @ 25 °C and pH 7
- 16) Auto ignition temperature: 197 °C @ 101.5 kPa
- 17) Decomposition temperature: No data available
- 18) Viscosity: 1.401 – 2.04 @ 20 °C
- 19) Molecular weight(mass): 188 – 191

## 10. STABILITY AND REACTIVITY

- 1) Stability and hazardous reactivity: No decomposition if stored and applied as directed.
- 2) Conditions to avoid: Heat, flames and sparks.
- 3) Incompatible materials: Strong oxidizing agents
- 4) Hazardous decomposition products: No decomposition if used as directed.

## 11. TOXICOLOGICAL INFORMATION

- 1) Exposure route information: No data available
- 2) Health hazard information
  - Acute toxicity:
    - Oral: LD50 5 000 – 15 000 mg/kg bw (rat)

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- Dermal: LD50 3 160 – 5 000 mg/kg bw (rabbit)
- Inhalation LC50 (4 h) 4.951 – 9.3 mg/L air (rat)
- Skin corrosion/Irritation: No data available
- Serious eye damage/irritation: No data available
- Respiratory sensitization: No data available
- Skin sensitization: No data available
- Carcinogenicity: No data available
- Germ cell mutagenicity: No data available
- Reproductive toxicity: No data available
- Specific target organ toxicity (single exposure): No data available
- Specific target organ toxicity (repeated exposure): No data available
- Aspiration hazard: 20°C kinematic viscosity with hydrocarbons 1.401 – 2.04 mm<sup>2</sup>/s), 20.5 mm<sup>2</sup>/s or less. In addition, if a person inhales paraffin of carbon water 6 to 16, it is likely to cause pneumonia, edema of the lungs and bleeding
- Other Harmful Effects: No data available

## 12. ECOLOGICAL INFORMATION

- 1) Aquatic toxicity:
  - Fish: LL50 (4 days) 10 – 803 000 mg/L
  - Crustacean: EL50 (48 h) 100 g/L
  - Aquatic algae: LC50 (4 days) 2 – 100 µg/L
- 2) Persistence and degradation:
  - Residuality: No data available
  - decomposability: No data available
- 3) Bioaccumulative potential:
  - condensability: No data available
  - biodegradability: Substance is readily biodegradable and has a low aquatic toxicity. > 60 %; 28 d; aerobic; OECD Test Guideline 301F(literature value)
- 4) Mobility in soil:
  - substance is a UVCB.
  - Standard tests for this endpoint are intended for single substances and are not appropriate for this complex substance.
- 5) Other adverse effects: No data available

## 13. DISPOSAL CONSIDERATIONS

- 1) Disposal methods: Can be incinerated, when in compliance with local regulations

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- 2) Precautions (including disposal of contaminated container of package):
- Empty remaining contents.
  - A waste code in accordance with the European Waste Catalogue (EWC) may not be assigned to this product since it admits of a classification only when the consumer uses it for some purpose.
  - The waste code must be determined in agreement with the regional waste disposal authority or company.


#### 14. TRANSPORT INFORMATION

- 1) UN No.: No information on classification of hazardous materials transportation
- 2) Proper shipping name: Not applicable
- 3) Class or division: Not applicable
- 4) Packing group: Not applicable
- 5) Marine pollutant: Not applicable
- 6) Special safety response for transportation or transportation measure: Not applicable

#### 15. REGULATORY INFORMATION

- 1) Occupational Safety and Health Act in Korea: Not applicable
- 2) Chemicals Control Act in Korea: Not applicable
- 3) Safety Control of Dangerous Substances Act in Korea: Class 4 Third Petroleum liquids  
[non-water soluble liquid\_(2000ℓ)]
- 4) Wastes Control Act in Korea: designated waste
- 5) Other regulations in KOREA and Abroad regulations:
  - Other regulation (Domestic): Not applicable
  - National regulations:
    - U.S.A. management information(OSHA regulation): Not applicable
    - U.S.A. management information(CERCLA regulation): Not applicable
    - U.S.A. management information(EPCRA 302 regulation): Not applicable
    - U.S.A. management information(EPCRA 304 regulation): Not applicable
    - U.S.A. management information(EPCRA 313 regulation): Not applicable
    - U.S.A. management information(Rotterdam Convention on Substances): Not applicable
    - U.S.A. management information(Stockholm Convention on Substances): Not applicable
    - U.S.A. management information(Montreal Protocol on Substances): Not applicable
    - EU Classification (Classification): Not applicable
    - EU Classification (Risk Phrases): Not applicable



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– EU Classification (Safety Phrases): Not applicable

#### 16. OTHER INFORMATION

- 1) Reference: ECHA [CHEM](#)
- 2) Date of initial completion: 2021. 02. 25
- 3) Number of revised/Date of last revision: 0 / 2021. 02. 25
- 4) Other: No data available