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


- 1) Product identifier: PARASOL-147
- 2) Relevant identified uses of the substance or mixture and uses advised against:
  - Use in Cleaning and cleaning agents, solvents.
- 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. +82 52 231 5587 Fax. +82 52 231 5699

## 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
- Prevention: No applicable
  - Response:
    - P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
    - P331: Do NOT induce vomiting.
  - Storage
    - P405: Store locked up.
  - Disposal:
    - P501: Dispose of contents/container in accordance with the waste-related laws.
- 3) Other hazards:
    - No data available

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	Common name	CAS No.	Concentration(wt%)
Alkanes, C14-17	-	90622-47-2	100

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#### 4. FIRST AID MEASURES

- 1) Following eye contact:
  - Wash the eyes under running water for more than 20 minutes when in contact with the substance.
  - Get emergency medical attention.
- 2) Following skin contact:
  - Get emergency medical attention.
  - Remove contaminated clothing and shoes and isolate the contaminated area.
  - Wash the skin and eyes under running water for more than 20 minutes when in contact with the substance.
  - Prevent the spread of the contaminated area in case of minor skin contact.
- 3) Following inhalation:
  - If breathing is difficult, provide oxygen.
  - If you do not breathe, perform artificial respiration.
  - Move it to a place with fresh air.
  - Keep it warm and steady.
- 4) Following ingestion:
  - Get medical aid immediately.
- 5) Advice to physician:
  - Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

#### 5. FIRE FIGHTING MEASURES

- 1) Suitable (and unsuitable) extinguishing media:
  - Small fire: Drying chemicals (appropriate extinguishing agents)
  - Small fire: water spray (appropriate extinguishing agent)
  - Small fire: CO2 (appropriate extinguishing agent)
  - Direct injection (inappropriate digestive medicine)
  - Blaze: Drying chemicals (appropriate extinguishing agents)
  - Blaze: My alcohol foam (appropriate digestive medicine)
  - Blaze: a large amount of water (appropriate extinguishing agent)
  - Blaze: Water spray/ fog (appropriate extinguishing agent)
  - Blaze: General foam (appropriate digestive medicine)
  - Blaze: CO2 (appropriate extinguishing agent)
- 2) Special hazards arising from the substance or mixture:
  - Container may explode when heated
  - Non-inflammable and non-inflammable materials do not burn themselves, but they can be decomposed when heated, resulting in corrosive/toxic fume.

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- Some may burn but do not ignite easily
- May produce irritable, corrosive and toxic gases in a fire
- 3) Special protective equipment for firefighters:
  - Be careful because it may be molten and transported.
  - Dig a ditch for the disposal of digestive water and lock it up so that the substance does not disperse.
  - If it is not dangerous, move the container from the fire area.
  - In the event of a tank fire, Fire should be carried out at the maximum distance or use unmanned fire extinguishing equipment.
  - In the event of a tank fire, cool the container with plenty of water even after digestion is extinguished.
  - In case of a tank fire, if the pressure release device has a high pitch or discoloration of the tank, step down immediately.
  - In the event of a tank fire, step away from the tank in flames.
  - Use unmanned fire extinguishing equipment in case of a blaze in a tank fire and let it burn if it is not possible.

## 6. ACCIDENTAL RELEASE MEASURES

- 1) Health considerations and protective equipment:
  - Remove all sources of ignition.
  - Stop the leak if it's not dangerous.
  - Do not touch damaged containers or leaks without wearing proper protective clothing.
  - Cover with plastic sheet to prevent spread.
  - Pay attention to substances and conditions to avoid.
  - All equipment must be grounded when handling materials.
- 2) Environmental precautions:
  - Prevent entry into waterways, sewers, basements or confined areas.
- 3) For cleaning up:
  - Cover or absorb dry sand/soil or other non-flammable materials and transfer them to a container.

## 7. HANDLING AND STORAGE

- 1) Precautions for safe handling:
  - Refer to engineering management and personal protective gear for work.
  - Pay attention to substances and conditions to avoid.
- 2) Conditions for safe storage (including any incompatibilities):
  - No data available

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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, C14-17	No data available	No data available	No data available

2) Appropriate engineering controls:

- No data available

3) Personal protection equipment

○ Respiratory protection:

- Wear respirators that are certified by the Industrial Safety and Health Service to fit the physical and chemical characteristics of exposed gases/liquids.
- For gas / liquid substances the following respiratory protection is recommended:  
Isolated full face gas mask (for organic compounds (if acid gas, acid gas)) or  
Isolation type half-gas mask (for organic compound (for acid gas, acid gas)) or  
Direct type full face gas mask (for organic compounds (for acid gas, for acid gas)) or  
The half-gas mask (for organic compounds (for acid gas, for acid gas)) or Electric Gas Mask
- In case of lack of oxygen (<19.5%), wear breathing mask or self-contained breathing apparatus.

○ Eye protection:

- Wear suitable protective goggles and face shields.
- Provide emergency showers and eyewash.

○ Hand protection:


- Wear appropriate protective gloves by considering physical and chemical properties of chemicals.

○ Body protection:

- Wear appropriate protective gloves by considering physical and chemical properties of chemicals.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

- 1) Appearance(Physical state, color, etc): Clear colorless liquid
- 2) Oder: the smell of petrochemical
- 3) Oder threshold: No data available
- 4) pH: No data available
- 5) Melting point/freezing point: 8 °C
- 6) Initial boiling point and boiling range: 247-266 °C

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- 7) Flash point: 114 °C
- 8) Evaporation rate: No data available
- 9) Flammability(solid, gas): No data available
- 10) Upper/lower flammability or explosive limits: No data available
- 11) Vapour pressure: <0.05 hPa @ 20°C, 0.09 hPa @ 50°C
- 12) Solubility(ies): <1.2 mg/L @ 20°C
- 13) Vapour density: No data available
- 14) Relative density: 0.7691 @ 15°C
- 15) n-octanol/water partition coefficient: 9.25 @ 25°C
- 16) Auto ignition temperature: 215°C
- 17) Decomposition temperature: No data available
- 18) Viscosity: 2.49 cSt at 40°C
- 19) Molecular weight(mass): 195-205

## 10. STABILITY AND REACTIVITY

- 1) Stability and hazardous reactivity:
  - Container may explode when heated
  - Some may burn but do not ignite easily
  - Non-inflammable and non-inflammable materials do not burn themselves, but they can be decomposed when heated, resulting in corrosive/toxic fume.
  - May produce irritable, corrosive and toxic gases in a fire
- 2) Conditions to avoid:
  - Ignition source(heat, spark, flame)
- 3) Incompatible materials:
  - Combustible and reducible substances
- 4) Hazardous decomposition products:
  - Corrosive/toxic steam
  - irritable, corrosive and toxic gases

## 11. TOXICOLOGICAL INFORMATION

- 1) Exposure route information
  - Absorbable on inhalation
  - absorption of the body by inhalation and fire extinguisher
  - Absorption is possible through skin, fire extinguisher, and aerosols.
  - Absorbable when inhaling steam
  - Body absorption by inhalation, skin and fire extinguisher
- 2) Health hazard information

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- Acute toxicity:
  - Oral: LD50 > 5000 mg/kg (Rat, OECD TG 401)
  - Eye/Skin: LD50>2000 mg/kg (Rat, OECD 402)
  - Inhalation (Aerosol / Vapor): LC50 >5,991 mg/m<sup>3</sup> (Rat OECD 403)  
(5,428 mg/m<sup>3</sup> Aerosol, 562 mg/m<sup>3</sup> Vapor)
- Skin corrosion/Irritation: Rabbit No Stimulation OECD 404
- Serious eye damage/irritation: Rabbit No stimulation OECD 405
- Respiratory sensitization: No data available
- Skin sensitization: Not applicable(Guinea pig,OECD 405)
- Carcinogenicity: Not applicable
- Germ cell mutagenicity: In vitro mammalian cell gene mutation test negative, salmonella typhoid return mutation test negative OECD 471 GLP
- Reproductive toxicity: Not applicable(Rat, OECD 416)
- Specific target organ toxicity (single exposure): Not applicable(OECD 401, 402, 403)
- Specific target organ toxicity (repeated exposure): Not applicable(RAT, OECD 408)
- Aspiration hazard: (Cat. 1)
  - Kinematic viscosity: about 2.49 mm<sup>2</sup>/s @ 20℃

## 12. ECOLOGICAL INFORMATION

- 1) Aquatic toxicity:
  - Fish: LL50 >87,556 mg/l 96 hr Oncorhynchus mykiss
  - Crustacean: NOELR > 100% WAFmg/l Ceriodaphnia dubia , 24hr
  - Aquatic algae: EL50 >1000 mg/l 72 hr Skeletonema costatum(ISO 10253)
- 2) Persistence and degradation: 74%(28D)
- 3) Bioaccumulative potential: No data available
- 4) Mobility in soil: Koc= 1772000
- 5) Other adverse effects: No data available

## 13. DISPOSAL CONSIDERATIONS

- 1) Disposal methods:
  - Dispose of oil and water separable in advance by using oil and water separation method.
  - Dispose of liquid organic solvents as waste organic solvents in any of the following ways.
  - Incineration
  - After disposing by evaporating and concentrating method, incinerate the residue.
  - After purifying by separating, distilling, extracting and filtering, incinerate the residue.
  - Dispose of residues generated after disposal using neutralization, oxidation, reduction, polymerization, and condensation reactions, or dispose of them again by coagulation, precipitation, filtration, and dehydration, and incinerate the residues.

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- 2) Precautions (including disposal of contaminated container of package):
- Regulations precautions indicated in Waste Management Act should be considered.

#### 14. TRANSPORT INFORMATION


- 1) UN No.: 3295
- 2) Proper shipping name: HYDROCARBONS, LIQUID, N.O.S, (Alkanes, (C=10-14))
- 3) Class or division: 3
- 4) Packing group: Not applicable
- 5) Marine pollutant: Not applicable
- 6) Special safety response for transportation or transportation measure:
  - Emergency measures in case of fire : F-E
  - Emergency measures in case of Outflow : S-D

#### 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
- 4) Wastes Control Act in Korea: No data available
- 5) Other regulations in KOREA and Abroad regulations:
  - Other regulation (Domestic):
    - Persistent Organic Pollutants (POPs) Control Act: 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(Mont-real Protocol on Substances): Not applicable
    - EU Classification (Classification): Not applicable
    - EU Classification (Risk Phrases): Not applicable
    - EU Classification (Safety Phrases): Not applicable

#### 16. OTHER INFORMATION

- 1) Reference:

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- Korea Occupational Safety & Health Agency MSDS
- OECD SIDS
- HSDB
- IARC
- ECOTOX
- NITE
- Recommendations on the transport of dangerous goods
- NCIS
- Emergency response guide book
- Korea Dangerous Material Inventory Management System, NEMA
- ECOSAR
- QSAR
- EU RAR
- The Chemical Database
- ICSC
- RTECS
- NIOSH Pocket guide
- ESIS
- ECHA CHEM
- HPVIS

2) Date of initial completion: 2009. 07. 15

3) Number of revised/Date of last revision: 7 / 2022. 03. 04

4) Other: No data available