



**Section 1 - PRODUCT AND COMPANY IDENTIFICATION**

Product Name: SFSK-ISOL-G

Intended Use: Industrial Solvent

Company Contact : TENOIT CO., LTD.

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**Section 2 - COMPOSITION / INFORMATION ON INGREDIENTS**

Reportable Hazardous Substance(s) or Complex Substance(s)

Name	CAS#	Concentration*
Hydrotreated heavy distillate (Hydrotreated heavy Petroleum)	64742-48-9	100%

**Section 3 - HAZARDS IDENTIFICATION**

**A. Classification:**

Flammable liquids : 3

Skin corrosion/irritation : 2

Specific target organ toxicity(single exposure) : 3

Aspiration hazard : 1

**B. Label element, including precautionary statements:**

- Symbols:



- Signal word(s): Danger, Warning

- Hazard statement(s):

- H226: Flammable liquid and vapour

- H304: May be fatal if swallowed and enters airways

- H315: Causes skin irritation

- H335: May cause respiratory irritation; or May cause drowsiness and dizziness

- Precautionary statement(s):

⊙ Prevention

- P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

- P233: Keep container tightly closed.

- P240: Ground/bond container and receiving equipment.

- P241: Use explosion-proof electrical/ventilating/lighting/.../equipment.

- P242: Use only non-sparking tools.

- P243: Take precautionary measures against static discharge.

- P261: Avoid breathing dust/fume/gas/mist/vapours/spray.



- P264: Wash ... thoroughly after handling.
- P271: Use only outdoors or in a well-ventilated area.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.
- ⊙ Response
- P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
- P302+P352: IF ON SKIN: Wash with plenty of soap and water.
- P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing.

Rinse skin with water/shower.

- P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P312: Call a POISON CENTER or doctor/physician if you feel unwell.
- P321: Specific treatment (see ... on this label).
- P331: Do NOT induce vomiting.
- P332+P313: If skin irritation occurs: Get medical advice/attention.
- P362: Take off contaminated clothing and wash before reuse.
- P370+P378: In case of fire: Use ... for extinction.

⊙ Storage

- P403+P233: Store in a well-ventilated place. Keep container tightly closed.
- P403+P235: Store in a well-ventilated place. Keep cool.
- P405: Store locked up.

⊙ Disposal

- P501: Dispose of contents/container to (in accordance with local /regional /national /international regulation).

**C. Other hazards which do not result in classification;**

- NFPA Ratings : Health:1, Flammability: 3, Reactivity: 0

**Section 4 - FIRST AID MEASURES**

**INHALATION :** If overcome by exposure, remove person to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential.

**SKIN CONTACT :** Remove contaminated clothing and wash skin with plenty of soap and water. Flush with plenty of water for 15 minutes. If sticky, use waterless cleaner first. Seek medical attention if ill effect or irritation develops.

**EYE CONTACT:** Thoroughly flush the eyes with large amounts of clean low-pressure water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation persists, seek medical attention.

**INGESTION :** Do not induce vomiting. Obtain emergency medical attention. Prompt action is essential.

**Most important symptoms/effect, acute and delayed:**

May cause slight eye and skin irritation. Not expected to be a sensitizer. This material may be absorbed through the skin. Overexposure may cause coughing, shortness of breath, dizziness.



Swallowing the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis.
<b>Indication of immediate medical attention and special treatment needed, if necessary:</b> Treat symptomatically. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.
<b>Section 5 - FIRE FIGHTING MEASURES</b>
<b>A. Suitable extinguishing media:</b>
SMALL FIRE: Use dry chemicals, CO <sub>2</sub> , water spray or alcohol-resistant foam. LARGE FIRE: Use water spray, water fog or alcohol-resistant foam
<b>B. Specific hazards arising from the chemical:</b>
Thermal decomposition may produce carbon monoxide and other toxic vapors.
<b>C. Special protective equipment and precautions for firefighters:</b>
Wear an approved positive pressure self-contained breathing apparatus and firefighter turnout gear. Heat from fire can generate flammable vapor. When mixed with air and exposed to ignition source, vapors can burn in open or explode if confined. Vapors may be heavier than air. May travel long distances along the ground before igniting and flashing back to vapor source. Fine sprays/mists may be combustible at temperatures below normal flash point. Fight fire from a safe distance/protected location. Heat may build enough pressure to rupture closed containers/spreading fire/increasing risk of burns/injuries. Use water spray/fog for cooling. Avoid frothing/steam explosion. Burning liquid may float on water. Although water soluble, may not be practical to extinguish fire by water dilution. Notify authorities immediately if liquid enters sewer/public waters.
<b>Section 6 - ACCIDENTAL RELEASE MEASURES</b>
<b>A. Personal precautions, protective equipment and emergency procedures:</b>
Wear chemical resistant gloves such as: Butyl rubber. Depending on the conditions of use, protective gloves, apron, boots, head and face protection should be worn. The equipment must be cleaned thoroughly after each use.
<b>B. Environmental precautions:</b>
May contaminate water supplies/pollute public waters. Evacuate/limit access. Equip responders with proper protection. Prevent flow to sewer/public waters. Stop release. Notify fire and environmental authorities. Restrict water use for cleanup.
<b>C. Methods and materials for containment and cleaning up:</b>
Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. 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. Large Spills: Water spray may reduce vapor but may not prevent ignition in closed spaces. Recover by pumping or with suitable absorbent



**Section 7 - HANDLING AND STORAGE**

**A. Precautions for safe handling:**

Avoid contact with skin. Use proper bonding and/or grounding procedures. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source).

**B. Conditions for safe storage. including incompatibilities:**

Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Storage containers should be grounded and bonded. Drums must be grounded and bonded and equipped with self-closing valves, pressure vacuum bungs and flame arresters.

Storage Temperature: [Ambient ]

Storage Pressure: [Ambient ]

Suitable Containers/Packing: Barges Drums Tank Cars Tank Trucks

Suitable Materials and Coatings: Carbon Steel Stainless Steel Polyethylene  
Polypropylene Teflon

Unsuitable Materials and Coatings: Natural Rubber Butyl Rubber Ethylene - propylene  
- diene monomer (EPDM) Polystyrene

**Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION**

**A. Exposure limits in the air of the workplace, biological limit values:**

- ACGIH TWA : 300 ppm.
- NIOSH recommend TWA 10Hr : 350 mg/m<sup>3</sup>
- NIOSH recommend TWA 15min : 1800 mg/m<sup>3</sup>

**B. Appropriate engineering controls:**

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:  
Adequate ventilation should be provided so that exposure limits are not exceeded. Use explosion-proof ventilation equipment.

**C. Individual protection measures:**

- ⊙ Respiratory protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include: Half-face filter respirator
- ⊙ Eye protection: Eye protection such as chemical splash goggles and/or face shield must be worn when possibility exists for eye contact due to splashing or spraying liquid, airborne particles, or vapor.
- ⊙ Hand protection: Wear chemical resistant gloves such as: Butyl rubber.
- ⊙ Body protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include: If prolonged or repeated contact is likely, chemical, and oil



resistant clothing is recommended

**Section 9 - PHYSICAL AND CHEMICAL PROPERTIES**

- A. **Appearance (physical state, colour etc):** Clear colorless Liquid
- B. **Odour:** Mild Petroleum/Solvent
- C. **Odour threshold:** No Data Available.
- D. **pH:** Not applicable
- E. **Melting point/freezing point:** No Data Available.
- F. **Initial boiling point and boiling range:** 158~177°C
- G. **Flash point:** Min 40°C
- H. **Evaporation rate:** No Data Available.
- I. **Flammability(solid, gas) :** Not applicable
- J. **Upper/lower flammability or explosive limits:** 0.7 ~ 7% (Vol.)
- K. **Vapour pressure:** 1.73 mmHg at 20°C
- L. **Solubility(ies):** Negligible
- M. **Vapour density:** No Data Available.
- N. **Specific gravity:** 0.743 at 15.56°C
- O. **Partition coefficient: n-octanol/water:** No Data Available.
- P. **Auto-ignition temperature:** Approximately 365°C
- Q. **Decomposition temperature:** No Data Available.
- R. **Viscosity:** Approximately 1.35 cSt at 25°C

**Section 10 - STABILITY AND REACTIVITY**

- A. **Chemical stability:** Material is stable under normal conditions
- B. **Possibility of hazardous reactivity:** Not expected to occur.
- C. **Conditions to avoid:**  
Heat, sparks, open flame, other ignition sources, and oxidizing conditions.
- D. **Incompatible materials:**  
Strong oxidizers such as hydrogen peroxide, nitric acid, sulphuric acid, etc.
- E. **Hazardous decomposition products:** Carbon oxides (CO, CO<sub>2</sub>)

**Section 11 - TOXICOLOGICAL INFORMATION**

- A. **Information on the likely routes of exposures:**
  - **Inhalation exposure:** May cause irritation, headache, sleepiness, sleepiness, dizziness, orientation loss.
  - **Ingestion exposure:** May cause irritation, vomiting, headache, dizziness, orientation loss, pulmonary congestion.
  - **Skin exposure:** May cause skin irritation. The liquid defats the skin.
  - **Eye exposure:** May cause slight eye irritation.
- B. **Delayed and immediate effects and also chronic effects from short and long term exposure:**
  - **Acute toxicity:**  
<IUCLID Data>  
Oral- LD50(rat): >5000mg/kg  
Skin- LD50(rabbit): >3160mg/kg  
Inhalation- No data available.



- Skin corrosion/irritation: May cause skin irritation.
- Serious eye damage/irritation: May cause slight eye irritation.
- Respiratory sensitization: Not expected to be a sensitizer.
- Skin sensitization: Not expected to be a sensitizer.
- Carcinogenicity: No Data Available.
- Germ cell mutagenicity: No Data Available.
- Reproductive toxicity: No Data Available.
- Specific target organ systemic toxicity-single exposure: No Data Available.
- Specific target organ systemic toxicity-repeated exposure: No Data Available.
- Aspiration hazard: Swallowing the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis .

C. Numerical measures of toxicity(such as acute toxicity estimate):  
No Data Available.

**Section 12 - ECOLOGICAL INFORMATION**

- A. Aquatic, terrestrial organisms toxicity:  
Pimephales promelas(fish) - LC50 : 2200mg/L/96 hr.
- B. Persistence and degradability:  
Expected to be readily biodegradable.  
Expected to degrade rapidly in air
- C. Bioaccumulative potential: Expected to bioaccumulate.
- D. Mobility in soil: Adsorbs to soil and has low mobility
- E. Other adverse effects: No Data Available.

**Section 13 - DISPOSAL CONSIDERATIONS**

- A. Disposal methods:  
Use only licensed transporters and permitted facilities for waste disposal.
- B. Disposal considerations(Specify disposal container and methods):  
RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrositivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

**Section 14 - TRANSPORT INFORMATION**

- A. UN Number: DOT ID No. (UN No.) : 1268
- B. UN Proper Shipping Name: PETROLEUM DISTILLATES, N. O. S.
- C. Transport hazard class(es): Class 3
- D. Packing group, if applicable: Group III
- E. Environmental hazards: No data available
- F. Special precautions for user: No data available

**Section 15 - REGULATORY INFORMATION**

- Safety, health and environmental regulations specific for the product in question:  
◇ <USA>
- CERCLA 103 (40CFR302.4) : Not listed.



- SARA 302 (40CFR355.30) : Not listed.
- SARA 304 (40CFR355.40) : Not listed.
- ◇ <EU>
- EU Classification : Carc. Cat. 2 R45 , Xn, R65
- Risk Phrase
  - R45 : May cause cancer.
  - R65 : Harmful: may cause lung damage if swallowed.
- Safety Phrases
  - S53 : Avoid exposure - obtain special instructions before use.
  - S45 : In case of accident or if you feel unwell, seek medical advice immediately(show the label where possible).

**Section 16- OTHER INFORMATION**

**A. References and sources for data:**

- 1) ICSC (International Chemical Safety Cards)- ILO
- 2) Globally Harmonized System of classification and labelling of chemicals(GHS), First revised edition, United Nations.
- 3) United States National Library of Medicine.
- 4) EINECS (European Inventory of Existing Commercial chemical Substances)
- 5) IARC(International Agency for Research on Cancer.)
- 6) NIOSH (The National Institute for Occupational Safety and Health)
- 7) ACGIH (American Conference of Governmental Industrial Hygienists.)
- 8) IUCLID Data
- 9) SK energy coporation R&D Center
- 10) Transport of Dangerous Goods-UN
- 11) Korea Occupatonal Safety & Health Agency
- 12) U.S Department of Health and Human Services.

**B. Originated date:** 2009. 8. 13.

**C. Revision number and date:**

Revision number: 0.

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