SAFETY DATA SHEET

Revision date: 2018-11-01 Version: KUN150(20).4

1. IDENTIFICATION

A. Product name : Kocosol-150ULN

B. Recommended use and restriction on use

- General use : Industrial Solvent

- Restriction on use : Not available

C. Manufacturer / Supplier / Distributor information

○ Manufacturer information

- Company name

SK Geo Centric Co., Ltd

- Address

Office) 51, Jong-ro, Jongno-gu, Seoul, Korea
Plant) 2, Sinyeocheon-ro, Nam-gu, Ulsan, Korea
R&D) 325, Exporo, Yuseong-gu, Daejeon, Korea

- Dept.

Safety Health Environment Team

- Telephone number : 82-2-2121-5114

- Emergency telephone number

82-52-208-2114

- Fax number :

- E-mail address :

○ Supplier/Distributer information

- Company name

SK Geo Centric Co., Ltd

- Address

Office) 51, Jong-ro, Jongno-gu, Seoul, Korea
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2. HAZARD IDENTIFICATION

A. GHS Classification

- Flammable liquids : Category3
- Acute toxicity (dermal) : Category5
- Skin corrosion/irritation : Category2
- Serious eye damage/irritation : Category2B
- Specific target organ toxicity(Single exposure) : Category3(Narcotic effects)
- Aspiration hazard : Category1
- Acute aquatic toxicity : Category2
- Chronic aquatic toxicity : Category2

B. GHS label elements

○ Hazard symbols

○ Signal words

- Danger

○ Hazard statements

- H401 Toxic to aquatic organisms.
- H320 Cause eye irritation.
- H315 Causes skin irritation
- H313 May be harmful if contact with skin.
- H304 May be fatal if swallowed and enters airways
- H411 Toxic to aquatic life with long lasting effects
- H336 May cause drowsiness and dizziness.
- H226 Flammable liquid and vapour

○ Precautionary statements

1) Prevention

- P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- P233 Keep container tightly closed.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P273 Avoid release to the environment.
- P271 Use only outdoors or in a well-ventilated area.
- P240 Ground/bond container and receiving equipment.
- P241 Use explosion-proof electrical/ventilating/lighting/equipment.
- P242 Use only non-sparking tools. Flammable liquids (chapter 2.6) 1, 2, 3
- P243 Take precautionary measures against static discharge.
- P261 Avoid breathing gas/mist/vapours/spray.
- P264 Wash hands thoroughly after handling.

2) 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.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P312 Call a POISON CENTER or doctor/physician if you feel unwell.
- P321 Specific treatment
- P331 Do NOT induce vomiting.
- P332+P313 If skin irritation occurs: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P362 Take off contaminated clothing and wash before reuse.
- P370+P378 In case of fire: Use Suitable extinguishing media for extinction(Refer Section MSDS 5).
- P391 Collect spillage.

3) Storage

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

4) Disposal

- P501 Dispose of contents/container in accordance with local/regional/national/international regulation

C. Other hazards which do not result in classification : (NFPA Classification)

○ NFPA grade (0 ~ 4 level)

- Health : 2 , Flammability : 1, Reactivity : 0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Trade names and Synonyms	CAS No.	%[weight]
Solvent naphtha (petroleum), heavy arom.	Heavy aromatic naphtha ; (Polyethyl)benzenes ;	64742-94-5	100

4. FIRST AID MEASURES

A. Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.
- Get medical attention immediately.

B. Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.
- Wash thoroughly after handling.
- Get medical attention immediately.
- Go to the hospital immediately if symptoms(flare, irritate) occur.

C. Inhalation contact

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.
- Get medical attention immediately.

D. Ingestion contact

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.
- Get medical attention immediately.
- If swallowed, large amounts of water to drink and do not induce vomiting.

E. Delayed and immediate effects and also chronic effects from short and long term exposure

- Not available

F. Notes to physician

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

5. FIREFIGHTING MEASURES

A. Suitable (Unsuitable) extinguishing media

- Dry chemical, carbon dioxide, regular foam extinguishing agent, spray
- Avoid use of water jet for extinguishing

B. Specific hazards arising from the chemical

- Not available

C. Special protective actions for firefighters

- Move containers from fire area, if you can do without the risk.
- Avoid inhalation of materials or combustion by-products.
- Do not access if the tank on fire.
- Use appropriate extinguishing measure suitable for surrounding fire.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Vapor or gas is burned at distant ignition sources can be spread quickly.
- Due to the extremely low flash point, irrigating fire extinguishing may be less effective when put out a fire.

6. ACCIDENTAL RELEASE MEASURES

A. Personal precautions, protective equipment and emergency procedures

- Ventilate closed spaces before entering.
- Move container to safe area from the leak area.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.
- Avoid skin contact and inhalation.

B. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.

C. Methods and materials for containment and cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.
- Do not use plastic containers.
- Prevent the influx to waterways, sewers, basements or confined spaces.

7. HANDLING AND STORAGE

A. Precautions for safe handling

- Since emptied containers retain product residue(vapor, liquid, solid) follow all MSDS and label warnings even after container is emptied.
- Avoid contact with incompatible materials.
- Get the manual before use.
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.
- Avoid contact with heat, sparks, flame or other ignition sources.

B. Conditions for safe storage, including any incompatibilities

- Check regularly for leaks.
- Do not apply any physical shock to container.
- Avoid direct sunlight.
- Keep in the original container.
- Keep sealed when not in use.
- Store away from water and sewer.
- Collected them in sealed containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A. Exposure limits

○ ACGIH TLV

- Not available

○ OSHA PEL

- Not available

B. Engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

C. Individual protection measures, such as personal protective equipment

○ Respiratory protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full facepiece and organic vaporcartridge(s).
- Any air-purifying respirator with a full facepiece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.

○ Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

○ Hand protection

- Wear appropriate chemical resistant glove.

○ Skin protection

- Wear appropriate chemical resistant protective clothing.

○ Others

- Not available

9. PHYSICAL AND CHEMICAL PROPERTIES

A. Appearance

- Appearance	: Liquid
- Color	: Clear colorless
B. Odor	: Aromatic, Hydrocarbon
C. Odor threshold	: Not available
D. pH	: Not available
E. Melting point/Freezing point	: Not available
F. Initial Boiling Point/Boiling Ranges	: 175 to 193°C
G. Flash point	: 59 ℃
H. Evaporation rate	: 0.08 (butyl acetate=1)
I. Flammability(solid, gas)	: Not available

J. Upper/Lower Flammability or explosive limits	: 0.6~7%
K. Vapour pressure	: 0.0027kPa (0.02mmHg)[room temperature]
L. Solubility	: <0.1wt% (water solubility)
M. Vapour density	: 4.8 [Air = 1]
N. Specific gravity(Relative density)	: 0.87 @ 15.56 ℃
O. Partition coefficient of n-octanol/water	: 2.8 to 6.5
P. Autoignition temperature	: 449 to 510°C
Q. Decomposition temperature	: Not available
R. Viscosity	: Kinematic (room temperature): 0.0114cm2/s (1.14cSt)
S. Molecular weight	: Not available

10. STABILITY AND REACTIVITY

A. Chemical Stability

- This material is stable under recommended storage and handling conditions.

B. Possibility of hazardous reactions

- Cylinders exposed to fire may vent and release flammable gas.

C. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces
- Avoid contact with heat, sparks, flame or other ignition sources.

D. Incompatible materials

- Not available

E. Hazardous decomposition products

- May emit flammable vapour if involved in fire.

11. TOXICOLOGICAL INFORMATION

A. Information on the likely routes of exposure

○ (Respiratory tracts)

- May be fatal if swallowed and enters airways

○ (Oral)

- Not available

○ (Eye·Skin)

- Cause eye irritation.
- Causes skin irritation

B. Delayed and immediate effects and also chronic effects from short and long term exposure

○ Acute toxicity

*** Oral**

- [Solvent naphtha (petroleum), heavy arom.] : LD50 > 5000 ㎎/kg Rat (IUCLID)

*** Dermal**

- [Solvent naphtha (petroleum), heavy arom.] : LD50 > 2000 ㎎/kg Rabbit (RTECS)

*** Inhalation**

- [Solvent naphtha (petroleum), heavy arom.] : Mist LC50 > 0.59 ㎎/ℓ 4 hr Rat (RETECS)

○ Skin corrosion/irritation

- Causes skin irritation

○ Serious eye damage/irritation

- Cause eye irritation.

○ Respiratory sensitization

- Not available

○ Skin sensitization

- Not available

○ Carcinogenicity

*** IARC**

- Not available

*** OSHA**

- Not available

*** ACGIH**

- Not available

*** NTP**

- Not available

*** EU CLP**

- Not available

○ **Germ cell mutagenicity**

- Not available

○ **Reproductive toxicity**

- Not available

○ **STOT-single exposure**

- May cause drowsiness and dizziness.

○ **STOT-repeated exposure**

- Not available

○ **Aspiration hazard**

- May be fatal if swallowed and enters airways

12. ECOLOGICAL INFORMATION

A. Ecotoxicity

○ **Fish**

- [Solvent naphtha (petroleum), heavy arom.] : LC50 = 45 ㎎/ℓ 96 hr Pimephales promelas (IUCLID)

○ **Crustaceans**

- [Solvent naphtha (petroleum), heavy arom.] : EC50 = 0.95 ㎎/ℓ 48 hr Daphnia magna (IUCLID)

○ **Algae**

- [Solvent naphtha (petroleum), heavy arom.] : EC50 = 2.5 ㎎/ℓ 72 hr Skeletonema costatum (IUCLID)

B. Persistence and degradability

○ **Persistence**

- [Solvent naphtha (petroleum), heavy arom.] : log Kow = 2.9 ~ 6.1 (IUCLID)

○ **Degradability**

- Not available

C. Bioaccumulative potential

○ **Bioaccumulative potential**

- [Solvent naphtha (petroleum), heavy arom.] : BCF = 130 ~ 159 (IUCLID)

○ **Biodegration**

- [Solvent naphtha (petroleum), heavy arom.] : Biodegradability = 39 (%) 28 day (Aerobic, Activated Sludge, Domestic wastewater, Does not decompose easily) (IUCLID)

D. Mobility in soil

- Not available

E. Other adverse effects

- Not available

13. DISPOSAL CONSIDERATIONS

A. Disposal methods

- Since more than two kinds of designaed waste is mixed, it is difficult to treat seperatly, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.

B. Special precautions for disposal

- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION

A. UN No. (IMDG CODE/IATA DGR)

- 1268

B. Proper shipping name

- PETROLEUM DISTILLATES, N.O.S. OR PETROLEUM PRODUCTS, N.O.S.

C. Hazard Class

- 3

D. IMDG CODE/IATA DGR Packing group

- Ⅲ

E. Marine pollutant

- Applicable

F. Special precautions for user related to transport or transportation measures

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : F-E (Non-water-reactive flammable liquids)
- EmS SPILLAGE SCHEDULE : S-E (Flammable liquids, floating on water)

15. REGULATORY INFORMATION

A. National and/or international regulatory information

○ POPs Management Law

- Not applicable

○ Information of EU Classification

*** Classification**

- [Solvent naphtha (petroleum), heavy arom.] : H304

○ U.S. Federal regulations

*** OSHA PROCESS SAFETY (29CFR1910.119)**

- Not applicable

*** CERCLA Section 103 (40CFR302.4)**

- Not applicable

*** EPCRA Section 302 (40CFR355.30)**

- Not applicable

*** EPCRA Section 304 (40CFR355.40)**

- Not applicable

*** EPCRA Section 313 (40CFR372.65)**

- Not applicable

○ Rotterdam Convention listed ingredients

- Not applicable

○ Stockholm Convention listed ingredients

- Not applicable

○ Montreal Protocol listed ingredients

- Not applicable

16. OTHER INFORMATION

A. Reference

- The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication. It is not intended to constitute performance information concerning the product. No express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information contained herein.
- This Safety Data Sheet was compiled with data and information from the following sources: KOSHA, NITE, ESIS, NLM, SIDS, IPCS

B. Issue date

2015-06-11

C. Revision number and Last date revised

Revision number : 4

Last date revised : 2018-11-01

D. Other

- This SDS is prepared according to the Globally Harmonized System (GHS).