

1. Identification

- A. Product name : Car cleaner (DR-180)
 Usage category : Oil paint
- B. Recommended Use and Restriction on Use
 General use : automotive refinish
 Restriction on use : Restricted to use other than recommended use
- C. Manufacturer / Supplier / distributor information
 Company name : NOROO Paint & Coatings Co., Ltd.
 Address : 351, Bakdal-ro, Manan-gu, Anyang-si, Gyeonggi-do, Korea
 Emergency telephone number : +82-31-467-6114

2. Hazard identification

- A. GHS Classification
 Flammable liquids Category 2
 Carcinogenicity Category 1B
 Germ cell mutagenicity Category 1B
 Chronic aquatic toxicity Category 3
 Serious eye damage/irritation Category 2A
 Specific target organ toxicity(Single exposure) Category 1
 Specific target organ toxicity(Single exposure) Category 2
 Specific target organ toxicity(Single exposure) Category 3 (respiratory irritation)
 Specific target organ toxicity(Repeated exposure) Category 1
 Specific target organ toxicity(Repeated exposure) Category 2
 Skin corrosion/irritation Category 2
 Aspiration hazard Category 1

B. GHS label elements

- Hazard symbols



- Signal words : DANGER
- Hazard statements :
- H225 Highly flammable liquid and vapour
 - H350 May cause cancer
 - H340 May cause genetic defects
 - H412 Harmful to aquatic life with long lasting effects
 - H319 Causes serious eye irritation
 - H370 Causes damage to organs: central nervous system (CNS), gastrointestinal tract(Refer Section SDS 11)
 - H371 Causes damage to the immune system and kidneys in the body. (Refer Section SDS 11)
 - H335+H336 May cause respiratory irritation, May cause drowsiness and dizziness.
 - H372 Prolonged or repeated exposure may cause lung damage to the body (Refer Section SDS 11)
 - H373 Prolonged or repeated exposure may cause damage to the liver, testes, skin, respiratory system, blood and central nervous system of the body (Refer Section SDS 11)
 - H315 Causes skin irritation
 - H304 May be fatal if swallowed and enters airways
- Precautionary statements
- Prevention
 - P210 Keep away from heat, hot surfaces, sparks, open flames and other sources of ignition. no smoking
 - P223 Do not contact with water
 - P240 Ground container and receiving equipment
 - P241 Use explosion-proof equipment (electricity, ventilation, lighting, etc.)
 - P242 Use only non-sparking tools. Flammable liquids (chapter 2.6) 1, 2, 3
 - P243 Take precautionary measures against static discharge.
 - P280 Wear protective gloves/protective clothing/eye protection/face protection.
 - P201 Obtain special instructions before use.
 - P202 Do not handle until all safety precautions have been read and understood.
 - P273 Avoid release to the environment.
 - P264 Wash hands and contact areas thoroughly after handling.
 - P260 Do not breathe dust/fume/gas/mist/vapours/spray.
 - P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
 - P271 Use only outdoors or in a well-ventilated area.
 - P270 Do not eat, drink or smoke when using this product.
 - Response
 - P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
 - P370+P378 In case of fire: Use Suitable extinguishing media for extinction(Refer Section MSDS 5).
 - P308+P313 If exposed or concerned: Get medical advice / attention.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313 If eye irritation persists, get medical attention / attention.

P308+P311 If exposed or concerned: Get medical advice / attention.

P321 Specific treatment

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.

P314 Get medical advice/attention if you feel unwell.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P332+P313 If skin irritation occurs: Get medical advice/attention.

P362+P364 Take off contaminated clothing and wash before reuse.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P331 Do NOT induce vomiting.

- Storage

P403+P235 Store in a well-ventilated place. Keep cool.

P405 Save by locking.

P403+P233 Store in a well-ventilated place. Keep container tightly closed

- Disposal

P501 Dispose of the contents and containers in accordance with waste-related laws.

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

Chemical Name	NFPA grade	Health	Flammability	Reactivity	GHS Classification
Ligroine		1	3	0	H304, H315, H319, H335+H336, H340, H350
Toluene		2	3	0	H304, H315, H319, H335+H336, H370, H372
Naphtha (petroleum), hydrotreated heavy		1	3	0	H304, H340, H350, H371, H373, H412

3. Composition/information on ingredients

Chemical Name	Trade names and Synonyms	CAS-NO	Content(%)
Ligroine	Ligroine	8032-32-4	71-81
Naphtha (petroleum), hydrotreated heavy	Naphtha (petroleum), hydrotreated heavy	64742-48-9	15-25
Toluene	Toluene	108-88-3	17-27

4. First-aid measures

A. Eye Contact : Flush exposed eyes with plenty of water for more than 15minutes.

If irritation, pain, swelling, tears or glaring happens, take medical assistant immediately

B. Skin Contact : Remove exposed clothing, and wash off exposed area with soap and water.

If symptoms like irritation or pain occurs, take medical assistant immediately.

Wash off with soap and water for more than 15 minutes. And take medical assistant immediately.

C. Inhalation : Avoid from exposure, and move into an area with fresh air.

If not breathing, perform the artificial respiration.

If inhaled or swallowed, do not perform the inhalation phase of breathing

Perform the artificial respiration, using the pocket mask with one way valves or other respiratory medical devices.

If hard to breathe, administering oxygen

Remove contaminated clothing and shoes, and isolate it.

Take a medical assistant immediately.

D. Ingestion Contact : Inducing vomit.

If unconscious, do not induce vomiting. In case of vomiting, keep head down under hip to prevent lung inhalation.

If ingested large quantity, take medical assistant.

Take proper medical assistant by symptoms.

It is need to be considered that early removal of some ingested material by gastric lavage must be weighed against potential complications of bleeding or perforation

E. Notes to Physician : There is no specific antidote and take an appropriate medical treatment.

5. Fire-fighting measures

A. Suitable (Unsuitable) extinguishing media

○ Suitable extinguishing media : Powder extinguishing agent, gaseous Extinguishing Agent, and regular foam.

○ (Unsuitable) extinguishing media : Avoid digestion using direct water.

○ Case of big fire : Spread large amount of the extinguishing agent as a mist form with staying against wind.

Stay away more than 800m to avoid tank explosion.

Use appropriate protective device depend on the situation.

B. Specific hazards arising from the chemical

○ Pyrolystate : Carbon dioxide, toxic carbon compounds/Nitrogen compounds/sulfur compounds

○ Fire and Explosion danger : Risk of medium-sized fire.

C. Special protective actions for fire-fighters

○ Personal Precautions, protective equipment : Gas mask or air respirator, heat resistant clothing, heat resistant

helmet, heat resistant gloves, heat resistant boots

○ Emergency procedures : Use appropriate extinguishing agents to catch fire.

If there is no risk, moving containers away from fire.

Cooling containers with water long time after extinguish fire.

Block the area except for the fire-suppression personnel.

6. Accidental release measures

A. Personal Precautions, protective equipment and emergency procedures

○ Personal Precautions, protective equipment : Gas mask for organic gases, other appropriate protective device / clothing / gloves.

○ Emergency procedures : Take an action to block the leakage if there is no risk.

Spray water to reduce amount of steam.

Do work with the personal protected devices such as gas mask for organic gases other appropriate protective devices / clothing / gloves.

Do not contact on the bare skin

B. Environmental precautions

○ Atmosphere : Do install the local ventilations and full ventilation system

Using local ventilation to Minimize the exposure to worker.

○ Soil : Trap spilled material at bottom in deep water pockets, excavated holding areas or within sand bag barriers.

Use absorbent to collect the appropriate container.

○ Under water : Use absorbent to collect the appropriate container.

Collect spilled material with mechanic devices

C. Methods and materials for containment and cleaning up

○ Small spill : Absorb for use sand or other non-combustible material.

Move to appropriate container for disposal of spilled material collected.

○ Large spill : Prohibit access of unnecessary people, isolate hazard area to secure.

Notify to central and local government, when emissions are above regulation.

7. Handling and storage

A. Precautions for safe handling : Keep or handle followed by Dangerous goods Safety Management Act

Ground for preventing the static discharge

Seal the container for minimizing the petroleum steam

Use local ventilations and a full ventilation system when handling

B. Conditions for safe storage, including any incompatibilities : Because of evaporation and contamination concerns, airtight the container and store in a well-ventilated building.

Avoid direct sunlight while storing outdoor.

Storage temperature: 5 ~ 35 °C

Avoid strong oxidizing agents, acid.

Stored in an isolated place, freezing caution, high temperature body caution.

8. Exposure controls/personal protection

A. Exposure Limits

○ Ligroine

- ACGIH : NO DATA

- Biological exposure indices : NO DATA

○ Toluene

- ACGIH : NO DATA

- Biological exposure indices : 血液中 Toluene : 0.02 mg/L(工作前), 尿中 Toluene : 0.03 mg/L(工作后), 尿中(with hydrolysis) o-Cresol : 0.3 mg/g creatinine(工作后)

○ Naphtha (petroleum), hydrotreated heavy

- ACGIH : NO DATA

- Biological exposure indices : NO DATA

B. Engineering Controls :

▷ Do install the local ventilations and full ventilation system

▷ Using local ventilation to Minimize the exposure to worker.

▷ NO DATA

▷ NO DATA

C. Personal Protective Equipment

○ Respiratory protection : Respirators should be authorized by Korea Occupational Safety and Health Agency

Use the personal protect respirator for organic solvent or higher level of capacity when workers are supposed to be exposed under unsuitable respiratory working condition, or longer period exposure than standard level.

○ Eye protection : Use the respirator for organic solvent or higher level.

Install washing facilities and an emergency washing facilities close to workplace.

Let workers do wear the safety glasses in case hazard caused by mist may be expected.

○ Hand protection : Do the workers wear the impermeable protective gloves made from rubber/PVC due to skin irritation may be supposed by chronic and long period exposure.

Wear the chemical protective gloves

○ Skin protection : Work after wearing the impermeable protective apron made by rubber/PVC in case hazard caused by exposure or spill, wear the impermeable whole body protective clothing if needed.

Wear appropriate chemical protective clothing.

9. Physical and chemical properties

A. Appearance : Transparent liquid

- B. Odor : solvent odor
- C. Odor threshold : NO DATA
- D. PH : NO DATA
- E. Melting point/Freezing point(°C) : NO DATA
- F. Initial Boiling Point/Boiling Ranges(°C) : 75~190
- G. Flash point(°C) : -16
- H. Evaporating Rate : NO DATA
- I. Flammability(solid, gas)(°C) : NON Flammable
- J. Upper/Lower Flammability or explosive limits : NO DATA
- K. Vapour pressure : NO DATA
- L. Solubility : NO DATA
- M. Vapour density : higher than air
- N. Specific gravity : 0.65~0.85
- O. Partition coefficient of n-octanol/water : NO DATA
- P. Autoignition temperature(°C) : 238
- Q. Decomposition temperature(°C) : NO DATA
- R. Viscosity : NO DATA
- S. Molecular weight : NO DATA

10. Stability and reactivity

- A. Chemical stability : NO DATA
- B. Possibility of hazardous reactions : Do not contact with heat, spark, flame or other flammable sources
Avoid contaminants and friction
- C. Conditions to avoid : Oxidation agent, metal and combustible materials
- D. Hazardous decomposition products : Thermal decomposition products (carbon etc..)

11. Toxicological information

- A. Information on the likely routes of exposure
 - Respiratory tracts : Adverse lung effects, Dyspnoea, Hypothermia, Vomiting
 - Oral : Vomiting, Diarrhea, Stomach pain, Irregular heartbeat
 - Skin : Irritation, Burn, Adverse nerve effects
 - Eye : Irritation, eye damage
- B. Delayed and immediate effects and also chronic effects from short and long term exposure
 - Lignoine
 - Acute toxicity
 - Oral : NO DATA
 - Dermal : NO DATA
 - Inhalation : NO DATA
 - Skin corrosion/irritation : 토끼에 드레이즈 테스트 결과 경자극이지만, 남성 3명의 피부에 10-30분 적용후 심각한 자극 발생하여 구분 2 (nite)
 - Serious eye damage/irritation : 인체 / 보고 안됨
 - Respiratory sensitization : NO DATA
 - Skin sensitization : NO DATA
 - Carcinogenicity
 - IARC : NO DATA
 - OSHA : NO DATA
 - ACGIH : NO DATA
 - NTP : NO DATA
 - EU CLP : Carc. 1B
 - Germ cell mutagenicity : NO DATA
 - Reproductive toxicity : NO DATA
 - STOT-single exposure : NO DATA
 - STOT-repeated exposure : NO DATA
 - Aspiration hazard : 기도를 통해 삼킬 경우 치명적일 수 있음(EU CLP)
 - Toluene
 - Acute toxicity
 - Oral : rat LD50=2600 mg/kg
 - Dermal : rabbit LD50=12,000 mg/kg
 - Inhalation : rabbit LD50=12,000 mg/kg
 - Skin corrosion/irritation : Rabbit skin irritation test using the results of the Causes moderate irritation.
 - Serious eye damage/irritation : Eyes irritant test using a rabbit raised for 6 days reversible irritation.
 - Respiratory sensitization : NO DATA
 - Skin sensitization : Tests with negative results Guinea
 - Carcinogenicity
 - IARC : Group 3
 - OSHA : NO DATA

- ACGIH : A4
- NTP : NO DATA
- EU CLP : NO DATA
- Germ cell mutagenicity : Dominant lethal test negative, positive micronucleus test, chromosome aberration test positive
- Reproductive toxicity : Dominant lethal test negative, positive micronucleus test, chromosome aberration test positive
- STOT-single exposure : Causes acts on the central nervous system in humans, fatigue, drowsiness, dizziness, respiratory irritation, agitation, vomiting, central nervous system depression, confusion, gait abnormalities. Eyes, nose, causing irritation of the throat. In experimental animals
- STOT-repeated exposure : Headaches accompanied by people from hearing loss or visual field constriction, or nystagmus, tremor, ataxia, loss of memory, such as chronic central nervous system disorder that appears. Noewichuk is observed. It appears kidney dysfunction such as hematuria or pro
- Aspiration hazard : NO DATA
- Naphtha (petroleum), hydrotreated heavy
 - Acute toxicity
 - Oral : LD50 > 15000 mg/kg Rat
 - Dermal : LD50 > 3160 mg/kg Rabbit
 - Inhalation : LD50 > 3160 mg/kg Rabbit
 - Skin corrosion/irritation : non-irritating(rabbit)
 - Serious eye damage/irritation : Non-irritating(rabbit)
 - Respiratory sensitization : NO DATA
 - Skin sensitization : NO DATA
 - Carcinogenicity
 - IARC : NO DATA
 - OSHA : NO DATA
 - ACGIH : NO DATA
 - NTP : NO DATA
 - EU CLP : Carc. 1B
 - Germ cell mutagenicity : in vitro, in vivo Mutagenicresult Negative
 - Reproductive toxicity : in vitro, in vivo Mutagenicresult Negative
 - STOT-single exposure : NO DATA
 - STOT-repeated exposure : NO DATA
 - Aspiration hazard : If swallowed, aspiration into the lungs with liquid may cause chemical pneumonitis.

12. Ecological information

A. Ecotoxicity

- Ligroine
 - Fish : NO DATA
 - Crustaceans : NO DATA
 - Algae : EC50 = 4700 mg/ℓ 72 hr *Selenastrum capricornutum*
- Toluene
 - Fish : LC50 24 mg/ℓ 96 hr *Oncorhynchus mykiss*
 - Crustaceans : EC50 11.5 mg/ℓ 48 hr *Daphnia magna*
 - Algae : NO DATA
- Naphtha (petroleum), hydrotreated heavy
 - Fish : LC50 = 2200 mg/ℓ 96 hr *Pimephales promelas*
 - Crustaceans : LC50 = 2.6 mg/ℓ 96 hr (Species: *Chaetogammarus marinus*)
 - Algae : NO DATA

B. Persistence and degradability

- Ligroine
 - Persistence : log Kow = 2.1 ~ 6 (Estimates)
 - Degradability : BOD5/COD = 1.29
- Toluene
 - Persistence : log Kow 2.73
 - Degradability : NO DATA
- Naphtha (petroleum), hydrotreated heavy
 - Persistence : log Kow = 2.1 ~ 6 (Estimates)
 - Degradability : NO DATA

C. Bioaccumulative potential

- Ligroine
 - Bioaccumulative potential : BCF = 60 ~ 80
 - Biodegradation : Biodegradability = 93 (%) 48 hr
- Toluene
 - Bioaccumulative potential : NO DATA
 - Biodegradation : 86 (%) 20 day
- Naphtha (petroleum), hydrotreated heavy
 - Bioaccumulative potential : NO DATA
 - Biodegradation : Biodegradability = 10 (%) 28 day (Aerobic, Activated Sludge, Domestic wastewater, Does not decompose easily)

D. Mobility in soil

- Ligroine
 - ▷ Koc = 80 ~ 125 (Estimates)
- Toluene
 - ▷ NO DATA
- Naphtha (petroleum), hydrotreated heavy
 - ▷ NO DATA

E. Other adverse effects

- Ligroine
 - ▷ NO DATA
- Toluene
 - ▷ NO DATA
- Naphtha (petroleum), hydrotreated heavy
 - ▷ NO DATA

13. Disposal considerations

- A. Disposal methods : Disposal material should keep in the airtighted container, and consign according to Waste Mateial Management Act
- B. Special precautions for disposal : Prohibit the unauthorized disposal and incineration due to adversely affect natural ecosystems
Discard it followed by appropriate regulations

14. Transport information

- A. UN number : 1263
- B. Proper shipping name : Paint (including paint, lacquer, enamel, colorants, shellac solutions, varnish, polish, liquid filler and liquid lacquer sealer) or related materials (including paint diluent and reductant).
- C. Hazard class : 3
- D. Packing group : II
- E. Marine pollutant : N/A
- F. Special precautions for user related to transport or transportation measures
 - EmS FIRE SCHEDULE : F-E
 - EmS SPILLAGE SCHEDULE : S-E

15. Regulatory information

- Ligroine
 - Information of EU Classification
 - ▷ Classification : NO DATA
 - ▷ Risk Phrases : NO DATA
 - ▷ Safety Phrase : NO DATA
 - U.S. Federal regulations
 - ▷ OSHA PROCESS SAFETY (29CFR1910.119) : NO DATA
 - ▷ CERCLA Section 103 (40CFR302.4) : NO DATA
 - ▷ EPCRA Section 302 (40CFR355.30) : NO DATA
 - ▷ EPCRA Section 304 (40CFR355.40) : NO DATA
 - ▷ EPCRA Section 313 (40CFR372.65) : NO DATA
 - Rotterdam Convention listed ingredients : NO DATA
 - Stockholm Convention listed ingredients : NO DATA
 - Montreal Protocol listed ingredients : NO DATA
- Toluene
 - Information of EU Classification
 - ▷ Classification : NO DATA
 - ▷ Risk Phrases : NO DATA
 - ▷ Safety Phrase : NO DATA
 - U.S. Federal regulations
 - ▷ OSHA PROCESS SAFETY (29CFR1910.119) : notapplicable
 - ▷ CERCLA Section 103 (40CFR302.4) : 453.599 kg 1000 lb
 - ▷ EPCRA Section 302 (40CFR355.30) : notapplicable
 - ▷ EPCRA Section 304 (40CFR355.40) : notapplicable
 - ▷ EPCRA Section 313 (40CFR372.65) : pertinent
 - Rotterdam Convention listed ingredients : NO DATA
 - Stockholm Convention listed ingredients : NO DATA
 - Montreal Protocol listed ingredients : NO DATA
- Naphtha (petroleum), hydrotreated heavy
 - Information of EU Classification
 - ▷ Classification : NO DATA
 - ▷ Risk Phrases : NO DATA
 - ▷ Safety Phrase : NO DATA
 - U.S. Federal regulations
 - ▷ OSHA PROCESS SAFETY (29CFR1910.119) : notapplicable
 - ▷ CERCLA Section 103 (40CFR302.4) : notapplicable
 - ▷ EPCRA Section 302 (40CFR355.30) : notapplicable
 - ▷ EPCRA Section 304 (40CFR355.40) : notapplicable
 - ▷ EPCRA Section 313 (40CFR372.65) : notapplicable
 - Rotterdam Convention listed ingredients : NO DATA
 - Stockholm Convention listed ingredients : NO DATA
 - Montreal Protocol listed ingredients : NO DATA

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 : 2007-03-02

C. Revision number and Last date revised : 5.(2022-09-21)

D. Other : " WWW.NOROO.CO.KR"