Date of issue: 2021/01/26
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Safety Data Sheet

Section 1. Identification of the substance/mixture and of the company/undertaking

Product identifier:
Product name: Ligroin
SDS No. : 4463E-2
Relevant identified uses of the substance or mixture and uses advised against
Research and Development
Details of the supplier of the safety data sheet
Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.
Address: 3-1, Honmachibashi, Chuo-ku, Osaka, JAPAN
Division: Chemical Safety Management Department
Telephone number: +81-6-6946-8061
FAX: +81-6-6946-1607

Section 2. Hazards identification

GHS classification and label elements of the product
Classification of the substance or mixture
PHYSICAL AND CHEMICAL HAZARDS
Flammable liquids: Category 2
HEALTH HAZARDS
Acute toxicity (Inhalation): Category 4
Skin corrosion/irritation: Category 2
Serious eye damage/eye irritation: Category 2
Specific target organ toxicity - single exposure: Category 3 (Respiratory tract irritation)
Specific target organ toxicity - single exposure: Category 3 (Narcotic effects)
Specific target organ toxicity - repeated exposure: Category 1 (nervous system)
Aspiration hazard: Category 1
ENVIRONMENT HAZARDS
Hazardous to the aquatic environment, short-term (acute): Category 1
Hazardous to the aquatic environment, long-term (chronic): Category 1
(Note) GHS classification without description: Not classified/Classification not possible
Label elements

Signal word: Danger
HAZARD STATEMENT
H225 Highly flammable liquid and vapor
H332 Harmful if inhaled
H315 Causes skin irritation
H319 Causes serious eye irritation
H335 May cause respiratory irritation
H336 May cause drowsiness or dizziness
H372 Causes damage to organs through prolonged or repeated exposure (nervous system)
H304 May be fatal if swallowed and enters airways

H410 Very toxic to aquatic life with long lasting effects

PRECAUTIONARY STATEMENT

Prevention

P273 Avoid release to the environment.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting equipment.
P242 Use non-sparking tools.
P243 Take action to prevent static discharges.
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P271 Use only outdoors or in a well-ventilated area.
P264 Wash contaminated parts thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P270 Do not eat, drink or smoke when using this product.

Response

P370 + P378 In case of fire: Use appropriate media to extinguish.
P391 Collect spillage.
P314 Get medical advice/attention if you feel unwell.
P312 Call a POISON CENTER/doctor/physician if you feel unwell.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P332 + P313 If skin irritation occurs: Get medical advice/attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
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 advice/attention.
P331 IF SWALLOWED: Do NOT induce vomiting.
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician.

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 in accordance with local/national regulation.

Specific adverse human health effects

See "11. Toxicological Information".

Section 3. Composition/information on ingredients

Mixture/Substance selection:

Substance

Ingredient name	Content (%)	CAS RN	ENCS	Chemical formula
Ligroin	100	8032-32-4	-	-

Note : The figures shown above are not the specifications of the product.

Supplementary information concerning ingredients

Chemical present in ligroin

・Heptane 87%
contain n-Heptane 24% (CAS RN 142-82-5)
・Octane 7.0%
・Cycloalkane 6.0%
contain Methylcyclohexane 1.0% (CAS RN 108-87-2)

Section 4. First-aid measures

Descriptions of first-aid measures

General measures

Get medical advice/attention if you feel unwell.

IF INHALED

Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER/doctor/physician if you feel unwell.
IF INHALED: Call a POISON CENTER/doctor/physician if you feel unwell.

IF ON SKIN

Take off immediately all contaminated clothing. Rinse skin with water or shower.
Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention.

IF IN EYES

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

IF SWALLOWED

Rinse mouth.
Do NOT induce vomiting.
Immediately call a POISON CENTER/doctor/physician.
IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell.

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Use appropriate extinguishing media suitable for surrounding facilities.
In case of fire, use spraying loaded liquid, foam (water-soluble liquid: alcohol-resistant foam), inactive gases, dry powder, dry sand to extinguish.
*Fire Service Act Group 4 Hazardous Materials

Unsuitable extinguishing media

Indoor Fire Plug System or Outdoor Fire Plug System
Sprinkler System
Dry Chemical Extinguishing System-Others (except for phosphates etc., Hydrogen Carbonates etc.)
Fire Extinguisher Discharging Jet Water/Spraying Water
Fire Extinguisher Discharging Jet Loaded Liquid
Fire Extinguisher Discharging Dry Extinguishing agents-Others (except for phosphates etc., Hydrogen Carbonates etc.)
Water Bucket or Water Tank
*Cabinet Order Concerning the Control of Hazardous Materials (Attached Table 5) Group 4

Hazardous Materials

Specific hazards arising from the substance or mixture

Fire may produce irritating, corrosive and/or toxic gases.
Runoff from fire control or dilution water may cause pollution.
See "10.Stability and Reactivity".

Advice for firefighters

Specific fire-fighting measures

Evacuate non-essential personnel to safe area.

Special protective equipment and precautions for fire-fighters

Wear fire resistant or flame retardant clothing.
Wear protective gloves/protective clothing/eye protection/face protection.
Firefighters should wear self-contained breathing apparatus with a full facepiece operated in the positive pressure mode.

Section 6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Keep unauthorized personnel away.
Ventilate area until material pick up is complete.
Wear proper protective equipment.

Environmental precautions

Prevent spills from entering sewers, watercourses, low areas or rivers. To be careful not discharged to the environment without being properly handled waste water contaminated.

Methods and materials for containment and cleaning up

Liquid: Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.
Solid: Sweep up, place in a bag and hold for waste disposal.

Preventive measures for secondary accident

Collect spillage.

Section 7. Handling and storage

Precautions for safe handling

Preventive measures

(Exposure Control for handling personnel)

Do not breathe dust/fume/gas/mist/vapors/spray.

(Protective measures against fire and explosion)

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Ground and bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting equipment.
Use non-sparking tools.
Take action to prevent static discharges.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Precautions)

Avoid contact with skin.
Avoid contact with eyes.

Safety Measures

Use only outdoors or in a well-ventilated area.

Wear protective gloves/protective clothing/eye protection/face protection.
Wash hands and contaminated parts thoroughly after handling.
When using do not eat, drink or smoke.

Any incompatibilities

See "10.Stability and Reactivity".

Advice on general occupational hygiene

Wash contaminated parts thoroughly after handling.
Do not eat, drink or smoke when using this product.
Take off contaminated clothing and wash it before reuse.

Storage

Conditions for safe storage

Keep container tightly closed.
Store locked up. (P405)
Store in a cool, dry place. Do not store in direct sunlight.
Storage in accordance with local/national regulation.

Container and packaging materials for safe handling

Use closed unbreakable containers.

Section 8. Exposure controls/personal protection

Control parameters

Administrative Control Levels and Concentration standard value

(n-Heptane)
Concentration standard value TWA: 500ppm

Occupational Exposure Limit

The Japan Society for Occupational Health

(n-Heptane)
200ppm; 820mg/m3
(Methylcyclohexane)
400ppm; 1600mg/m3

ACGIH

(n-Heptane)
TWA: 200ppm; STEL: 400ppm (URT irr; lung dam; CNS impair; ototoxicity)
(Methylcyclohexane)
TWA: 100ppm (Kidney dam)

Notation

(n-Heptane)
OTO

Exposure controls

Appropriate engineering controls

Do not use in areas without adequate ventilation.
Eye wash station should be available.
Washing facilities should be available.

Individual protection measures

Recommend to use protective equipment in conformity with the standards.
Use appropriate protective equipment in accordance with local/national regulation.

Respiratory protection

Wear respiratory protection (dust-proof mask/gas mask). Select chemical cartridge corresponding to type of gases when using a gas mask.

Hand protection

Wear impervious protective glove.

Eye protection

Wear eye/face protection. Wear safety goggles in cases gas is generated.

Skin and body protection

Wear protective clothing.

Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Liquid

Color: Colorless, Clear

Odor: Characteristic odor

Melting point/Freezing point data is not available.

Boiling point or initial boiling point: (Ligroin)93-107℃

Boiling range data is not available.

Flammability data is not available.

Lower and upper explosion limit/flammability limit data is not available.

Flash point: (Ligroin)-10℃

Auto-ignition temperature data is not available.

Decomposition temperature data is not available.

pH data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Insoluble

Solubility in solvent data is not available.

Partition coefficient n-octanol/water data is not available.

Vapor pressure data is not available.

Density and/or relative density: 0.7

Relative vapor density (Air=1) data is not available.

Particle characteristics data is not available.

Other information

Other information is not available.

Section 10. Stability and Reactivity

Reactivity

Not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

(n-Heptane)

The vapour is heavier than air and may travel along the ground; distant ignition possible.

As a result of flow, agitation, etc., electrostatic charges can be generated.

Reacts violently with strong oxidants. This generates fire and explosion hazard. Attacks many plastics. (ICSC 0657)

(Methylcyclohexane)

The vapour is heavier than air and may travel along the ground; distant ignition possible.

As a result of flow, agitation, etc., electrostatic charges can be generated.

Reacts violently with strong oxidants. This generates fire and explosion hazard. (ICSC 0923)

Conditions to avoid

Contact with incompatible materials.
Contact with fire source.

Incompatible materials

Oxidizing agents, Peroxides

Hazardous decomposition products

Carbon oxides

Section 11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[Data for components of the product]

[NITE-CHRIP]

(Ligroin)

rat LD50: > 25 mL/kg (a converted value: > 15875 mg/kg) (source: NITE)

(n-Heptane)

mouse LD50: 5000 mg/kg (source: NITE)

Acute toxicity (Dermal)

[Data for components of the product]

[NITE-CHRIP]

(Ligroin)

rabbit LD50: > 5 mL/kg (4 hour) (a converted value: > 3175 mg/kg) (source: NITE)

(n-Heptane)

rabbit LD50: 3000 mg/kg (source: NITE)

Acute toxicity (Inhalation)

[Product]

Category 4, Harmful if inhaled

[Data for components of the product]

[NITE-CHRIP]

(Ligroin)

vapor: rat LC50: 14000 - 16000 ppm (4-hour) (source: NITE)

(n-Heptane)

vapor: rat LC50: 25132 ppm (4-hour) (source: NITE)

(Methylcyclohexane)

vapor: mouse LC50: 7500 - 10000 ppm (2-hour) (converted 4-hour equivalent value: 5303 - 7071.1 ppm) (source: NITE)

Irritant properties

Skin corrosion/irritation

[Product]

Category 2, Causes skin irritation

[Data for components of the product]

[NITE-CHRIP]

(Ligroin)

Category 2 (source: NITE)

(n-Heptane)

Category 2 (source: NITE)

Serious eye damage/irritation

[Product]

Category 2, Causes serious eye irritation

[Data for components of the product]
[NITE-CHRIP]
(Ligroin)
Category 2 (source: NITE)
(n-Heptane)
Category 2 (source: NITE)
(Methylcyclohexane)
Category 2B (source: NITE)

Allergenic and sensitizing effects data is not available.

Mutagenic effects data is not available.

Carcinogenicity

[Data for components of the product]
[EU]
(Ligroin)
Category 1B; Substances presumed to have carcinogenic potential for humans

Reproductive toxicity data is not available.

Specific target organ toxicity (STOT)

STOT-single exposure

[Product]
Category 3, May cause respiratory irritation
Category 3, May cause drowsiness or dizziness

[Data for components of the product]
[NITE-CHRIP]
(Ligroin)
Category 3 (Respiratory tract irritation), Category 3 (Narcotic effects) (source: NITE)
(n-Heptane)
Category 3 (Respiratory tract irritation), Category 3 (Narcotic effects) (source: NITE)
(Methylcyclohexane)
Category 3 (Respiratory tract irritation), Category 3 (Narcotic effects) (source: NITE)

STOT-repeated exposure

[Product]
Category 1, Causes damage to organs through prolonged or repeated exposure

[Data for components of the product]
[NITE-CHRIP]
(Ligroin)
Category 1 (nervous system) (source: NITE)
(n-Heptane)
Category 1 (nervous system) (source: NITE)
(Methylcyclohexane)
Category 2 (kidneys) (source: NITE)

Aspiration hazard

[Product]
Category 1, May be fatal if swallowed and enters airways

[Data for components of the product]
[NITE-CHRIP]
(Ligroin)
Category 1 (source: NITE)
(n-Heptane)
Category 1 (source: NITE)
(Methylcyclohexane)

Category 1 (source: NITE)

Section 12. Ecological Information

Toxicity

Aquatic toxicity

[Product]

Category 1, Very toxic to aquatic life

Category 1, Very toxic to aquatic life with long lasting effects

[Data for components of the product]

Hazardous to the aquatic environment, short-term (acute)

[NITE-CHRIP]

(n-Heptane)

Crustacea (Mysidopsis bahia) 96-hour LC50: 0.1 mg/L (source: NITE)

(Methylcyclohexane)

Crustacea (Daphnia magna) 48-hour EC50: 0.33 mg/L (source: NITE)

Hazardous to the aquatic environment, long-term (chronic)

[NITE-CHRIP]

(Methylcyclohexane)

Algae (Pseudokirchneriella subcapitata) 72-hour NOErC: 0.067 mg/L (source: NITE)

Water solubility

(n-Heptane)

2.2 mg/L (25℃) (source: ICSC, 2015)

(Methylcyclohexane)

none (source: ICSC, 1997)

Persistence and degradability

[Data for components of the product]

(n-Heptane)

Rapidly degradable (Degradation rate: 101% (by BOD)) (source: NITE)

(Methylcyclohexane)

Not rapidly degradable (Degradation rate: 0% (by BOD)) (source: NITE)

Bioaccumulative potential

[Data for components of the product]

(n-Heptane)

log Pow: 4.66 (source: ICSC, 2015)

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data is not available.

Section 13. Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging

Waste treatment methods

Avoid release to the environment.

Dispose of contents/container as industrial waste. Accordance with local/national regulation.

Section 14. Transport Information

UN Number or ID Number : 1268
UN Proper Shipping Name :
PETROLEUM DISTILLATES, N.O.S or PETROLEUM PRODUCTS, N.O.S.
Class or division (Transport hazard class) : 3
Packing group : II
ERG GUIDE No.: 128

IMDG Code (International Maritime Dangerous Goods Regulations)
UN Number or ID Number : 1268
UN Proper Shipping Name :
PETROLEUM DISTILLATES, N.O.S or PETROLEUM PRODUCTS, N.O.S.
Class or division (Transport hazard class) : 3
Packing group : II

IATA (Dangerous Goods Regulations)
UN Number or ID Number : 1268
UN Proper Shipping Name :
PETROLEUM DISTILLATES, N.O.S or PETROLEUM PRODUCTS, N.O.S.
Class or division (Transport hazard class) : 3
Hazard labels : Flamm. liquid
Packing group : II

Environmental hazards
Marine pollutants (yes/no) : yes

Section 15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture
U.S. Toxic Substances Control Act (TSCA) Inventory
Chemicals listed in TSCA Inventory
Methylcyclohexane; n-Heptane; Ligroin

Other regulatory information
Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

Section 16. Other information

References and sources for data
Globally Harmonized System of classification and labelling of chemicals, UN
Recommendations on the TRANSPORT OF DANGEROUS GOODS 23rd edit., 2023 UN
IMDG Code, 2024 Edition (Incorporating Amendment 42-24)
IATA Dangerous Goods Regulations (66th Edition) 2025
2024 EMERGENCY RESPONSE GUIDEBOOK (US DOT)
2025 TLVs and BEIs. (ACGIH)
JIS Z 7252 : 2019
JIS Z 7253 : 2019
Recommendation of occupational exposure limits (2023-2024) (JSOH)
Supplier's data/information

General Disclaimer

Please provide SDS to customers for selling or transferring.
All chemicals have unknown hazard. Handle the product with care.
This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.
The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products' properties.
The GHS classification data given here is based on current Data published in Japan (National Institute of Technology and Evaluation (NITE) Chemical Risk Information Platform (NITE-CHRIP), up to FY2024).