Date of issue: 26/01/2021

Safety Data Sheet

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

Product identifier:

Product name: Ligroin

SDS No. : 4463E-1

Details of the supplier of the safety data sheet

Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.

Address: 3-1, Honmachibashi, Chuo-ku,Osaka ,JAPAN

Division: Safety Management Dept. of Chemicals

Telephone number: +81-6-6946-8061

FAX: +81-6-6946-1607

e-mail address: kagakuhinanzenkanri@kishida.co.jp

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

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(Narcosis)

Specific target organ toxicity - repeated exposure: Category 1(nervous system)

Aspiration hazard: Category 1

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment (Acute): Category 1

Hazardous to the aquatic environment (Long-term): Category 1

(Note) GHS classification without description: Not classified/Classification not possible

Label elements

Signal word: Danger

HAZARD STATEMENT

Highly flammable liquid and vapor

Causes skin irritation

Causes serious eye irritation

May cause respiratory irritation

May cause drowsiness or dizziness

Causes damage to organs through prolonged or repeated exposure(nervous system)

May be fatal if swallowed and enters airways

Very toxic to aquatic life

Very toxic to aquatic life with long lasting effects

PRECAUTIONARY STATEMENT

Prevention

Avoid release to the environment.

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

Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe dust/fume/gas/mist/vapors/spray.
Use only outdoors or in a well-ventilated area.
Wash contaminated parts thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
Do not eat, drink or smoke when using this product.

Response

In case of fire: Use appropriate media other than water for extinction.
Collect spillage.
Get medical advice/attention if you feel unwell.
Call a POISON CENTER or doctor/physician if you feel unwell.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF ON SKIN: Wash with plenty of soap and water.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
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.
Do NOT induce vomiting.
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

Storage

Store in a well-ventilated place. Keep container tightly closed. Keep cool.

Disposal

Dispose of contents/container in accordance with local/national regulation.

Specific Physical and Chemical hazards

Highly flammable liquid. Vapor/air mixture may explode.

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3. Composition/information on ingredients

Mixture/Substance selection:

Substance

Ingredient name:Ligroin
Content (%):<100
CAS No.:8032-32-4
ECNO:232-453-7

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

Supplementary information concerning ingredients

Components contained in Ligroin
・Heptane 25% (CAS No.142-82-5)
・2-Methylhexane <35% (CAS No.591-76-4)
・3-Methylhexane <35% (CAS No.589-34-4)
・2,3-Dimethylpentane <35% (CAS No.565-59-3)
・n-Octane 0.80% (CAS No.111-65-9)
・2,2-Dimethylhexane <25% (CAS No.590-73-8)
・2,3-Dimethylhexane <25% (CAS No.584-94-1)
・2,4-Dimethylhexane <25% (CAS No.589-43-5)
・2,5-Dimethylhexane <25% (CAS No.592-13-2)
・3,4-Dimethylhexane <25% (CAS No.583-48-2)

・2-Methylheptane <25% (CAS No.592-27-8)
・3-Methylheptane <25% (CAS No.589-81-1)
・4-Methylheptane <25% (CAS No.589-53-7)

4. First-aid measures

Descriptions of first-aid measures

General measures

Get medical attention/advice if you feel unwell.

IF INHALED

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

IF ON SKIN (or hair)

Take off immediately all contaminated clothing. Rinse skin with water/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 or doctor/physician.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

In case of fire, use foam, dry powder, CO2 to extinguish.

Unsuitable extinguishing media

Indoor　firefighting equipment or outdoor　firefighting equipment
Sprinkler equipment
Dry-powder firefighting equipment - except for phosphate etc.,hydrogen carbonate etc.
Straight stream water extinguisher
Water mist extinguisher
Reinforcing liquid jet extinguisher
Dry-powder extinguisher - except for phosphate etc.,hydrogen carbonate etc.
Bucket of water or tank of water

Specific hazards arising from the substance or mixture

Containers may explode when heated.
Fire may produce irritating, corrosive and/or toxic gases.

Advice for firefighters

Specific fire-fighting measures

Evacuate non-essential personnel to safe area.

Special protective equipment and precautions for fire-fighters

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

6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Ventilate area until material pick up is complete.

Wear proper protective equipment.

Environmental precautions

Prevent spills from entering sewers, watercourses or low areas.

Methods and materials for containment and cleaning up

Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

Preventive measures for secondary accident

Collect spillage.

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/sparks/open flames/hot surfaces. - No smoking.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

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.

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 in a cool, dry place. Do not store in direct sunlight.

Container and packaging materials for safe handling

Glass

Iron

8. Exposure controls/personal protection

Control parameters

Adopted value

(Heptane)

ACGIH(1979) TWA: 400ppm;

STEL: 500ppm (CNS impair; URT irr)
(2-Methylhexane)
ACGIH(1979) TWA: 400ppm;
STEL: 500ppm (CNS impair; URT irr)
(3-Methylhexane)
ACGIH(1979) TWA: 400ppm;
STEL: 500ppm (CNS impair; URT irr)
(2,3-Dimethylpentane)
ACGIH(1979) TWA: 400ppm;
STEL: 500ppm (CNS impair; URT irr)
(n-Octane)
ACGIH(1979) TWA: 300ppm (URT irr)
(2,2-Dimethylhexane)
ACGIH(1979) TWA: 300ppm (URT irr)
(2,3-Dimethylhexane)
ACGIH(1979) TWA: 300ppm (URT irr)
(2,4-Dimethylhexane)
ACGIH(1979) TWA: 300ppm (URT irr)
(2,5-Dimethylhexane)
ACGIH(1979) TWA: 300ppm (URT irr)
(3,4-Dimethylhexane)
ACGIH(1979) TWA: 300ppm (URT irr)
(2-Methylheptane)
ACGIH(1979) TWA: 300ppm (URT irr)
(3-Methylheptane)
ACGIH(1979) TWA: 300ppm (URT irr)
(4-Methylheptane)
ACGIH(1979) TWA: 300ppm (URT irr)

OSHA-PEL
(3,4-Dimethylhexane)
TWA: 500ppm, 2350mg/m3
(Heptane)
TWA: 500ppm, 2000mg/m3
(2,2-Dimethylhexane)
TWA: 500ppm, 2350mg/m3
(2,3-Dimethylhexane)
TWA: 500ppm, 2350mg/m3
(2,4-Dimethylhexane)
TWA: 500ppm, 2350mg/m3
(n-Octane)
TWA: 500ppm, 2350mg/m3
(4-Methylheptane)
TWA: 500ppm, 2350mg/m3
(3-Methylheptane)
TWA: 500ppm, 2350mg/m3
(2,5-Dimethylhexane)
TWA: 500ppm, 2350mg/m3
(2-Methylheptane)
TWA: 500ppm, 2350mg/m3

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
Respiratory protection
Wear respiratory protection.
Hand protection
Wear protective gloves.
Eye protection
Wear eye/face protection.

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: −95℃
Boiling point or initial boiling point: 90 through 125℃
Boiling range data is not available.
Flammability (gases, liquids and solids) data is not available.
Lower and upper explosion limit/flammability limit data is not available.
Flash point: −11.5℃
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: 0.1g/L (20℃)
n-Octanol/water partition coefficient data is not available.
Vapor pressure data is not available.
Density and/or relative density: 0.68 through 0.75(20℃)
Relative vapor density (Air=1) data is not available.
No Particle characteristics data is not available.

10. Stability and Reactivity

Reactivity
Not available.
Chemical stability
Stable under normal storage/handling conditions.
Possibility of hazardous reactions
(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)
(2-Methylhexane)
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.
Heating may cause violent combustion or explosion. Reacts with strong oxidants. (ICSC 0658)
(n-Octane)
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 with strong oxidants. This generates fire and explosion hazard. Attacks some forms of plastic, rubber and coatings. (ICSC 0933)

(2-Methylheptane)
The vapour is heavier than air and may travel along the ground; distant ignition possible.
Upon heating, toxic fumes are formed. Reacts with oxidants. (ICSC 0731)

Conditions to avoid
Contact with incompatible materials.
Contact with fire source.

Incompatible materials
Oxidizing agents

Hazardous decomposition products
Carbon oxides

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11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)
[GHS Cat. Japan, base data]
(Heptane)
mouse LD50=5000mg/kg (IUCLID, 2000)

Acute toxicity (Dermal)
[GHS Cat. Japan, base data]
(Heptane)
rabbit LD50=3000mg/kg (IUCLID, 2000)

Acute toxicity (Inhalation)
[GHS Cat. Japan, base data]
(Ligroin)
vapor: rat LC50=14000-16000ppm/4hr (EHC 20, 1982)
(Heptane)
vapor: rat LC50=25132ppm/4hr (MOE risk assessment vol.6, 2008)

Irritant properties

Skin corrosion/irritation
[GHS Cat. Japan, base data]
(Ligroin)
human serious irritation (EHC 20, 1982; HSDB, 2005)
(Heptane)
human dermatitis (DFGOT vol.11,1998)
(n-Octane)
human hyperemia et al (PATTY 6th, 2012)

Serious eye damage/irritation
[GHS Cat. Japan, base data]
(Ligroin)
rabbit minimally irritation (EHC 20, 1982)
(Heptane)
human irritation (MOE risk assessment vol.6, 2008)
(n-Octane)
recoverable eyes disability (HSDB, 2014)

Allergenic and sensitizing effects data is not available.

Mutagenic effects data is not available.

Carcinogenicity
(Ligroin)
EU-Category 1B; Substances presumed to have carcinogenic potential for humans

Reproductive toxicity data is not available.

STOT

STOT-single exposure

[cat.3 (resp. irrit.)]
[GHS Cat. Japan, base data]
(Ligroin)
respiratory tract irritation (HSDB, 2005)
(Heptane)
respiratory tract irritation (SIDS, 2013)
(n-Octane)
respiratory tract irritation (HSDB, 2014)
[cat.3 (drow./dizz.)]
[GHS Cat. Japan, base data]
(Ligroin)
narcotic effect (HSDB, 2005)
(Heptane)
narcotic effect (SIDS, 2013)
(n-Octane)
narcotic effect (HSDB, 2014)
STOT-repeated exposure
[cat.1]
[GHS Cat. Japan, base data]
(Ligroin)
nervous system (HSDB, 2005)
(Heptane)
nervous system (SIDS, 2013)
Aspiration hazard
[cat.1]
[GHS Cat. Japan, base data]
(Ligroin)
cat. 1; HSDB, 2005
(Heptane)
cat. 1; hydrocarbon, chemical pneumonia (HSDB, 2014)
(n-Octane)
cat. 1; hydrocarbon, kinematic viscosity=0.7373 (25℃), chemical pneumonia (HSDB, Access on June 2014)
(2-Methylheptane)
cat. 1; kinematic viscosity < 20.5 mm2/s (40℃)

12. Ecological Information

Ecotoxicity
Aquatic toxicity
Very toxic to aquatic life
Very toxic to aquatic life with long lasting effects
Hazardous to the aquatic environment (Acute)
[GHS Cat. Japan, base data]
(Heptane)
Crustacea (Mysidopsis bahia) LC50=0.1mg/L/96hr (SIDS, 2013)
(n-Octane)
Crustacea (Mysidopsis bahia) LC50=0.1mg/L/96hr (SIDS, 2010)
Hazardous to the aquatic environment (Long-term)
[GHS Cat. Japan, base data]
(n-Octane)
Fish (Atheriniformes) early life stage NOEC=0.028mg/L (MOE Japan, 1998)
Water solubility
(Heptane)

none (ICSC, 1997)
(2-Methylhexane)
none (ICSC, 2002)
(2-Methylheptane)
none (ICSC, 1997)
(n-Octane)
insoluble (ICSC, 1997)

Persistence and degradability
(Heptane)
Degrade rapidly (BOD_Degradation : 101% (Registered chemicals data check & review, 1996))
(n-Octane)
Degrade rapidly (SIDS, 2010)

Bioaccumulative potential
(Heptane)
log Pow=4.66 (ICSC, 1997)
(n-Octane)
log Pow=5.18 (PHYSPROP DB, 2005)

Mobility in soil
Mobility in soil data is not available.

Other adverse effects
Ozone depleting chemical data is not available.

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 (- if this is not the intended use).
Dispose of contents/container in accordance with local/national regulation.

14. Transport Information

UN No. or ID No.: 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 No.: 1268
Proper Shipping Name :
PETROLEUM DISTILLATES, N.O.S or PETROLEUM PRODUCTS, N.O.S.
Class or division : 3
Packing group : II

IATA Dangerous Goods Regulations
UN No.: 1268
Proper Shipping Name :
PETROLEUM DISTILLATES, N.O.S or PETROLEUM PRODUCTS, N.O.S.
Class or division : 3
Hazard labels : Flamm.liquid
Packing group : II
Special provisions No.: A3

Environmental hazards
MARPOL Annex III - Prevention of pollution by harmful substances

Marine pollutants (yes/no) : yes
MARPOL Annex V - Prevention of pollution by garbage discharge
Specific target organ toxicity - repeated exposure: cat.1
Ligroin; Heptane
Hazardous to the aquatic environment - acute hazard: cat.1
Heptane; n-Octane
Hazardous to the aquatic environment - long-term hazard: cat.1, 2
Heptane; n-Octane
Maritime transport in bulk according to IMO instruments
Noxious Liquid ; Cat. X
n-Octane; Heptane

15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture
Chemicals listed in TSCA Inventory
n-Octane; Heptane; 2,3-Dimethylpentane; 3,4-Dimethylhexane; 3-Methylhexane; 3-Methylheptane; 2-Methylhexane; Ligroin
Other regulatory information
Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

16. Other information

GHS classification and labelling
Flam. Liq. 2: H225 Highly flammable liquid and vapor
Skin Irrit. 2: H315 Causes skin irritation
Eye Irrit. 2: H319 Causes serious eye irritation
STOT SE 3: H335 May cause respiratory irritation
STOT SE 3: H336 May cause drowsiness or dizziness
STOT RE 1: H372 Causes damage to organs through prolonged or repeated exposure
Asp. Tox. 1: H304 May be fatal if swallowed and enters airways
Aquatic Acute 1: H400 Very toxic to aquatic life
Aquatic Chronic 1: H410 Very toxic to aquatic life with long lasting effects
Reference Book
Globally Harmonized System of classification and labelling of chemicals, (7th revised edition, 2017), UN
Recommendations on the TRANSPORT OF DANGEROUS GOODS 20th edit., 2017 UN
IMDG Code, 2018 Edition (Incorporating Amendment 39-18)
IATA Dangerous Goods Regulations (61th Edition) 2020
Classification, labelling and packaging of substances and mixtures (Table 3 ECNO6182012)
2016 EMERGENCY RESPONSE GUIDEBOOK (US DOT)
2020 TLVs and BEIs. (ACGIH)
http://monographs.iarc.fr/ENG/Classification/index.php
Supplier's data/information
General Disclaimer
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 Japan official data (NITE

published in 2019).