

Safety Data Sheet

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

Product identifier:

Product name: Petroleum ether

Reference number(SDS): 41040jis_E1-2

Product type:

Reagent

Details of the supplier of the safety data sheet

Manufacturer/Supplier: JUNSEI CHEMICAL CO., LTD.

Address: 1-6, Ohmano-cho, Koshigaya-shi, Saitama 343-0844, Japan

Division: Quality Assurance Department

Telephone number: +81-48-986-6161

FAX: +81-48-989-2787

e-mail address: shiyaku-t@junsei.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

Reproductive toxicity: 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 2

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

Label elements



Signal word: Danger

HAZARD STATEMENT

H225-Highly flammable liquid and vapor

H315-Causes skin irritation

H319-Causes serious eye irritation

H361-Suspected of damaging fertility or the unborn child

H335-May cause respiratory irritation

H336-May cause drowsiness or dizziness

H372-Causes damage to organs through prolonged or repeated exposure

H304-May be fatal if swallowed and enters airways

H401-Toxic to aquatic life

PRECAUTIONARY STATEMENT**Prevention**

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- 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.
- Use personal protective equipment as required.
- Do not eat, drink or smoke when using this product.

Response

- In case of fire: Use appropriate media other for extinction.
- Get medical advice/attention if you feel unwell.
- IF exposed or concerned: Get medical advice/attention.
- 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.
- IF SWALLOWED: Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.

Storage

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

Disposal

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

Specific Physical and Chemical hazards

- Highly flammable liquid. Vapor/air mixture may explode.

3. Composition/information on ingredients**Mixture/Substance selection:****Mixture****Chemical identification: Petroleum hydrocarbons (C5~C6)**

Ingredient name: Petroleum ether

Content (%): 100

CAS No.: 8032-32-4

ECNO: 232-453-7

Impurities

n-Pentane (CAS No. 109-66-0): 75~85%

Hexane (CAS No. 110-54-3): 5~15%

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

4. First-aid measures

Descriptions of first-aid measures

General measures

- Get medical attention/advice if you feel unwell.
- IF exposed or concerned: Get medical advice/attention.
- Call a POISON CENTER or doctor/physician if you feel unwell.
- Keep victim warm and quiet.
- Call emergency medical service.

IF INHALED

- Remove person to fresh air and keep comfortable for breathing.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- 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.
- Remove and isolate contaminated clothing and shoes.
- In case of burns, immediately cool affected skin for as long as possible with cold water.
- Do not remove clothing if adhering to skin.

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.
- Call a POISON CENTER or doctor/physician if you feel unwell.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

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

Unsuitable extinguishing media

- Do not use direct water jet.
- Water may be effective for cooling, but may not effect extinguishment.

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.
- Cool container with water spray.

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 piece operated positive pressure mode.

6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

- Keep unauthorized personnel away.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Ventilate area until material pick up is complete.
- Wear proper protective equipment.
- PUBLIC SAFETY: Ventilate closed spaces before entering.
- Do not touch or walk through spilled material.

Environmental precautions

- Runoff to sewer may create fire or explosion hazard.
- Vapor explosion hazard indoors, outdoors or in sewers.
- Avoid release to headsprings, rivers, lakes, ocean and groundwater.

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.
- Use clean non-sparking tools to collect absorbed material.
- All equipment used when handling the product must be grounded.

Preventive measures for secondary accident

- Collect spillage.
- Stop leak if you can do it without risk.
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Prevent entry into waterways, sewers, basements or confined areas.
- Keep out of low areas.

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

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Use only outdoors or in a well-ventilated area.
- Wear protective gloves/protective clothing/eye protection/face protection.
- Use personal protective equipment as required.
- When using do not eat, drink or smoke.

Any incompatibilities

- Strong oxidizing agents should not be mixed with the chemicals.

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

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

Keep cool. Protect from sunlight.

Store locked up.

Container and packaging materials for safe handling data is not available.

Specific end use(s)

See information in Section 7.1 and 7.2 for handling and storage recommendations. See Section 8 for exposure controls and personal protection recommendations.

8. Exposure controls/personal protection

Control parameters

Control value

(Hexane)

Japan control value (2004) ≤ 40 ppm

Adopted value

(n-Pentane)

JSOH(1987) 300ppm; 880mg/m³

Adopted value in ACGIH is not available.

(Hexane)

JSOH(1985) 40ppm; 140mg/m³ (dermal)

ACGIH(1996) TWA: 50ppm (CNS impair; peripheral neuropathy; eye irr)

Notation...Skin

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. Recommended material(s): nitrile, viton

Consult with your glove and/or personnel equipment manufacturer for selection of appropriate compatible materials.

Eye protection

Wear safety glasses with side-shields.

Wear eye/face protection.

Skin and body protection

Wear impervious clothing and boots in case of repeated or prolonged treatment.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Volatile liquid

Color: Colorless

Odor: Characteristic odor

Odor threshold data is not available.

Melting point/Freezing point data is not available.

Boiling point or initial boiling point: 41°C

Boiling range data is not available.

Flammability (gases, liquids and solids) data is not available.

Lower and upper explosion limit/flammability limit:

Lower explosion limit: 1.1vol %

Upper explosion limit: 5.9vol %

Flash point: $\leq -20^{\circ}\text{C}$

Auto-ignition temperature: $>200^{\circ}\text{C}$

Decomposition temperature data is not available.

Self-Accelerating Decomposition Temperature/SADT data is not available.

pH data is not available.

Dynamic viscosity data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Practically insoluble

Solubility in solvent: Very soluble in ethanol, diethyl ether.

n-Octanol/water partition coefficient data is not available.

Vapor pressure data is not available.

Vapor density data is not available.

VOC data is not available.

Evaporation rate data is not available.

Density and/or relative density: 0.620~0.660g/ml(20°C)

Relative vapor density (Air=1): 2.6 (est)

Relative density of the Vapor/air - mixture at 20°C (Air = 1) data is not available.

Critical temperature data is not available.

No Particle characteristics data is not available.

10. Stability and Reactivity

Reactivity

Reactivity data is not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

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

Conditions to avoid

Contact with incompatible materials.

Open flames. Heat. Sparks.

Incompatible materials

Strong oxidizing agents

Hazardous decomposition products

Carbon oxides

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Inhalation)

[GHS Cat. Japan, base data]

(Petroleum ether) vapor: rat LC50=14000~16000ppm/4hr (EHC 20, 1982)

Labor standard law, Japan; Toxic

Hexane

Irritant properties

Skin corrosion/irritation

(Hexane) DFGOT vol.14(2000)

[GHS Cat. Japan, base data]

(Petroleum ether) human : serious irritation (EHC 20, 1982; HSDB, 2005)

(Hexane) rabbit/human : slight irritation (DFGOT vol.14, 2000)

Serious eye damage/irritation

[GHS Cat. Japan, base data]

(Petroleum ether) rabbit : minimally irritation (EHC 20, 1982)

(Hexane) rabbit : slight irritation (DFGOT vol.14, 2000)

(n-Pentane) rabbit : mild irritation (SIDS, 2010; EU-RAR, 2003)

Allergenic and sensitizing effects data is not available.

Mutagenic effects data is not available.

Carcinogenicity

(Petroleum ether)

EU-Category 1B; Substances presumed to have carcinogenic potential for humans

(Hexane)

EPA "Inadequate Information to Assess Carcinogenic Potencial"(2005)

Reproductive toxicity

[GHS Cat. Japan, base data]

(Hexane) cat. 2; rat : ATSDR, 1999

STOT

STOT-single exposure

[cat.3 (resp. irrit.)]

[GHS Cat. Japan, base data]

(Petroleum ether) respiratory tract irritation (HSDB, 2005)

(Hexane) respiratory tract irritation (ACGIH 7th, 2001)

(n-Pentane) respiratory tract irritation (EU-RAR, 2003)

[cat.3 (drow./dizz.)]

[GHS Cat. Japan, base data]

(Petroleum ether) narcotic effect (HSDB, 2005)

(Hexane) narcotic effect (PATTY 5th, 2001)

(n-Pentane) narcotic effect (ACGIH 7th, 2014)

STOT-repeated exposure

[cat.1]

[GHS Cat. Japan, base data]

(Petroleum ether) nervous system (HSDB, 2005)

(Hexane) nervous system (ACGIH 7th, 2001)

Aspiration hazard

[cat.1]

[GHS Cat. Japan, base data]

(Petroleum ether) cat. 1; HSDB, 2005

(n-Pentane) cat. 1; hydrocarbon, kinematic viscosity=0.355 mm²/s (25/20°C, CERI cal.)

(Hexane) cat. 1; hydrocarbon, kinematic viscosity < 20.5 mm²/s (40°C)

Information on other hazards

Data on the preparation itself is not available.

12. Ecological Information

Ecotoxicity

Aquatic toxicity

H401-Toxic to aquatic life

Hazardous to the aquatic environment (Acute)

[GHS Cat. Japan, base data]

(n-Pentane) Crustacea (Daphnia magna) EC50=2.7mg/L/48hr (EU-RAR, 2003; SIDS, 2010)

(Hexane) Crustacea (Daphnia magna) LC50=3.88mg/L/48hr (EHC122, 1991)

Hazardous to the aquatic environment (Long-term)

[GHS Cat. Japan, base data]

(n-Pentane) Algae (Pseudokirchneriella subcapitata) NOEC (r)=2mg/L/72hr (RU-RAR, 2003; SIDS, 2010)

Water solubility

(n-Pentane) 0.004 g/100 ml (20°C) (ICSC, 2014)

(Hexane) 0.0013 g/100 ml (20°C) (ICSC, 2000)

Persistence and degradability

(n-Pentane) Degrade rapidly [BOD_Degradation : 96% (Registered chemicals data check & review, 1997)]

(Hexane) BOD_Degradation : 100% (Registered chemicals data check & review)

Bioaccumulative potential

(n-Pentane) log Pow=3.39 (PHYSPROP DB, 2005; EU-RAR, 2003)

(Hexane) log Pow=3.9 (ICSC, 2000)

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data is not available.

Additional data

Data on the preparation itself 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., UN CLASS

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

Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : no

MARPOL Annex V – Prevention of pollution by garbage discharge

Specific target organ toxicity – repeated exposure: cat.1

Petroleum ether; Hexane

Maritime transport in bulk according to IMO instruments

Noxious Liquid ; Cat. Y

n-Pentane(Y-404); Hexane(Y-395)

15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

Chemicals listed in TSCA Inventory

n-Pentane; Hexane; Petroleum ether

Other regulatory information

We are not able to check up the regulatory information with regard to the substances in your country or region, therefore, we request this matter would be filled by your responsibility.

Regulatory information with regard to this substance in your country or in your region should be examined by your own responsibility.

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

Regulatory information in this section are limited to intentional ingredient(s), but does not contain information on non-intentional ingredients or impurities which are not informed by supplier(s).

Chemical safety assessment

Advice on safe handling for this product can be found in sections 7 and 8 of this SDS.

16. Other information

GHS classification and labelling

H225-Flam. Liq. 2: H225 Highly flammable liquid and vapor

H315-Skin Irrit. 2: H315 Causes skin irritation

H319-Eye Irrit. 2: H319 Causes serious eye irritation

H361-Repr. 2: H361 Suspected of damaging fertility or the unborn child

H335-STOT SE 3: H335 May cause respiratory irritation

H336-STOT SE 3: H336 May cause drowsiness or dizziness

H372-STOT RE 1: H372 Causes damage to organs through prolonged or repeated exposure

H304-Asp. Tox. 1: H304 May be fatal if swallowed and enters airways

H401-Aquatic Acute 2: H401 Toxic to aquatic life

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>

JIS Z 7252 : 2019

JIS Z 7253 : 2019

2019 Recommendation on TLVs (JISOH)

Supplier's data/information

Chemicals safety data management system "GHS Assistant" Version 4.10 (<https://www.asahi-ghs.com/>)

NITE Chemical Risk Information Platform "NITE-CHRIP"

(https://www.nite.go.jp/en/chem/chrip/chrip_search/systemTop)

GHS Classification Guidance for Enterprises 2019 Revised Edition (Ver. 2.0) (Mar. 2020, METI)

Definitions and Abbreviations

SDS (Safety Data Sheet)

LD50 (Lethal Dose, 50%)

LC50 (Lethal Concentration, 50%)

IARC (International Agency for Research on Cancer)

ACGIH (American Conference of Governmental Industrial Hygienists)

EPA (US Environmental Protection Agency)
NTP (US National Toxicology Program)
JSOH (Japan Society for Occupational Health)
EU (European Union)
EC50 (Effective Concentration, 50%)
NOEC (No Observed Effect Concentration)
BOD (Biochemical Oxygen Demand)
COD (Chemical Oxygen Demand)
BCF (Bioconcentration Factor)
anh (anhydride)

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).