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

   Product identifier:
   - Product name: Heptane
   - Product code (SDS NO): 3623E-2

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(nerve/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
   - 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.
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.

3. Composition/information on ingredients
Mixture/Substance selection:
Substance
Ingredient name: Heptane
Content (%): 97 (min)
Chemical formula: C7H16
Chemicals No, Japan: 2-7
CAS No.: 142-82-5
MW: 100.20
ECNO: 205-563-8
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 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
- 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
Unsuitable extinguishing media data is not available.
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 piece 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, etc.), 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
Stainless steel
Iron

8. Exposure controls/personal protection

Control parameters

Adopted value
(Heptane)
ACGIH(1979) TWA: 400ppm;
STEL: 500ppm (CNS impair; URT irr)

OSHA–PEL
Heptane TWA: 500ppm, 2000mg/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
Odor: Characteristic odor
pH data is not available.
Boiling point or initial boiling point: 98℃
Boiling range data is not available.
Melting point/Freezing point: -91℃
Decomposition temperature data is not available.
Flammability (gases, liquids and solids) data is not available.
Flash point: (Heptane)-5.5~4℃
Auto-ignition temperature: 285℃
Lower and upper explosion limit/flammability limit:
  Lower explosion limit: 1.1 vol %
  Upper explosion limit: 6.7 vol %
Vapor pressure: 4.6 kPa (20℃)
Relative vapor density (Air=1): 3.46
Density and/or relative density: 0.68 g/ml
Kinematic viscosity data is not available.
Solubility:
  Solubility in water: Insoluble
n-Octanol/water partition coefficient: log Pow 4.66
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
Reacts violently with strong oxidants. This generates fire and explosion hazard. Attacks many plastics. (ICSC 0657)
Conditions to avoid
Contact with incompatible materials.
Contact with fire source.
Incompatible materials
  Strong oxidizing agents
Hazardous decomposition products
  Carbon oxides

11. Toxicological Information
Information on toxicological effects
Acute toxicity data is not available.
Irritant properties
Skin corrosion/irritation
  [GHS Cat. Japan, base data]
Heptane

human dermatitis (DFGOT vol.11, 1998)

Serious eye damage/irritation
[GHSC Cat. Japan, base data]
(Heptane)
human irritation (MOE risk assessment vol.6, 2008)

Allergenic and sensitizing effects data is not available.
Mutagenic effects data is not available.
Carcinogenic effects data is not available.
Reproductive toxicity data is not available.

STOT
STOT—single exposure
[cat. 3 (resp. irrit.)]
[GHSC Cat. Japan, base data]
(Heptane)
respiratory tract irritation (HSDB, 2014)
[cat. 3 (drow./dizz.)]
[GHSC Cat. Japan, base data]
(Heptane)
narcosis (HSDB, 2014)

STOT—repeated exposure
[cat. 1]
[GHSC Cat. Japan, base data]
(Heptane)
nerve/nervous system (SIDS, 2013)

Aspiration hazard
[cat. 1]
[GHSC Cat. Japan, base data]
(Heptane)
cat. 1: hydrocarbon, chemical pneumonia (HSDB, 2014)

12. Ecological Information
Ecotoxicity
Aquatic toxicity
Very toxic to aquatic life
Very toxic to aquatic life with long lasting effects

Aquatic acute toxicity component(s) data
[GHSC Cat. Japan, base data]
(Heptane)
Crustacea (Mysidopsis bahia) LC50=0.1mg/L/96hr (SIDS, 2013)

Water solubility
(Heptane)
none (ICSC, 1997)

Persistence and degradability
(Heptane)
Degrade rapidly (BOD Degradation: 101% (Registered chemicals data check & review, 1996))

Bioaccumulative potential
(Heptane)
log Pow=4.66 (ICSC, 1997)

Mobility in soil
Mobility in soil data is not available.

Other adverse effects
Ozone depleting chemical data is not available.
13. Disposal considerations

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.: 1206
Proper Shipping Name: HEPTANES
Class or division: 3
Packing group: II
ERG GUIDE No.: 128

IMDG Code (International Maritime Dangerous Goods Regulations)
UN No.: 1206
Proper Shipping Name: HEPTANES
Class or division: 3
Packing group: II

IATA Dangerous Goods Regulations
UN No.: 1206
Proper Shipping Name: HEPTANES
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): yes
MARPOL Annex V – Prevention of pollution by garbage discharge
Specific target organ toxicity – repeated exposure: cat.1
Heptane
Hazardous to the aquatic environment – acute hazard: cat.1
Heptane
Hazardous to the aquatic environment – long-term hazard: cat.1, 2
Heptane
Transport in bulk according to Annex II of MARPOL73/78 and IBC Code
Noxious Liquid; Cat. X
Heptane

15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture
US major regulations
TSCA
Heptane

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, (6th ed., 2015), UN
- Recommendations on the TRANSPORT OF DANGEROUS GOODS 20th ed., 2017 UN
- IATA Dangerous Goods Regulations (60th Edition) 2019
- Classification, labelling and packaging of substances and mixtures (table3-1 ECN06182012)
- 2016 EMERGENCY RESPONSE GUIDEBOOK (US DOT)
- 2019 TLVs and BEIs. (ACGIH)
- 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 2018).