Date of issue: 11/05/2017
Date of revision: 03/10/2019

Safety Data Sheet

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

Product identifier:
- Product name: Acrylonitrile, monomer
- Product code (SDS NO): 0126E-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
- Acute toxicity (Oral): Category 3
- Acute toxicity (Dermal): Category 2
- Acute toxicity (Inhalation): Category 2
- Skin corrosion/irritation: Category 2
- Serious eye damage/eye irritation: Category 1
- Skin sensitization: Category 1
- Carcinogenicity: Category 1B
- Reproductive toxicity: Category 1B
- Specific target organ toxicity - single exposure: Category 1(nerve/nervous system; liver; kidney; blood/blood system)
- 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; respiratory apparatus/system; blood/blood system; testicle; kidney; liver)

ENVIRONMENT HAZARDS
- Hazardous to the aquatic environment (Acute): Category 2
- Hazardous to the aquatic environment (Long-term): Category 2

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

Label elements

Signal word: Danger

HAZARD STATEMENT
- Highly flammable liquid and vapor
- Toxic if swallowed
- Fatal in contact with skin
- Fatal if inhaled
- Causes skin irritation

Causes serious eye damage
May cause an allergic skin reaction
May cause cancer
May damage fertility or the unborn child
Causes damage to organs after single exposure
May cause respiratory irritation
May cause drowsiness or dizziness
Causes damage to organs through prolonged or repeated exposure
Toxic to aquatic life
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.
In case of inadequate ventilation wear respiratory protection. (as specified by the manufacturer/supplier or the competent authority.)
Use only outdoors or in a well-ventilated area.
Do not get in eyes, on skin, or on clothing.
Wash contaminated parts thoroughly after handling.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/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 or rash occurs: Get medical advice/attention.
Take off immediately all 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.
Rinse mouth.
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:Acrylonitrile

Content (%):98(min)

Chemical formula:CH2:CHCN

Chemicals No, Japan:2-1513

CAS No.:107-13-1

MW:53.06

ECNO:203-466-5

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

Impurities and stabilizing additives

MEHQ 0.0035～0.0045%

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.

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

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 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

Do not get in eyes, on skin, or on clothing.

Wash contaminated parts thoroughly after handling.

Do not eat, drink or smoke when using this product.

Contaminated work clothing should not be allowed out of the workplace.

Take off immediately all 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.

Keep under lock and key.
Container and packaging materials for safe handling
Glass

8. Exposure controls/personal protection

Control parameters
Adopted value
(Acrylonitrile)
ACGIH(2015) TWA: 2ppm (CNS impair; LRT irr)
Notation
(Acrylonitrile)
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.
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: 77℃
Boiling range data is not available.
Melting point/Freezing point: -84℃
Decomposition temperature data is not available.
Flammability (gases, liquids and solids) data is not available.
Flash point: (Acrylonitrile)-6℃
Auto-ignition temperature: 481℃
Lower and upper explosion limit/flammability limit:
Lower explosion limit: 3.0 vol %
Upper explosion limit: 17.0 vol %
Vapor pressure: 11.0 kPa (20℃)
Relative vapor density (Air=1): 1.8
Relative density of the Vapor/air - mixture at 20℃ (Air = 1): 1.05
Density and/or relative density: 0.81 (20℃)
Kinematic viscosity data is not available.
Solubility:
Solubility in water: (Soluble) 7 g/100 ml (20℃)
n-Octanol/water partition coefficient: log Pow0.25
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

The substance polymerizes due to heating and under the influence of light and bases. This generates fire or explosion hazard. Decomposes on heating. This produces toxic fumes including hydrogen cyanide and nitrogen oxides. Reacts violently with strong acids and strong oxidants. Attacks plastics and rubber. (ICSC 0092)

Conditions to avoid

Contact with incompatible materials.
Contact with fire source.

Incompatible materials

Strong acids, Strong oxidizing agents

Hazardous decomposition products

Nitrogen oxides, Hydrogen cyanide

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[GHS Cat. Japan, base data]
(Acrylonitrile)
rat LD50=72mg/kg (EHC 28, 1983)

Acute toxicity (Dermal)

[GHS Cat. Japan, base data]
(Acrylonitrile)
rat LD50=148mg/kg (EHC 28, 1983)

Acute toxicity (Inhalation)

[GHS Cat. Japan, base data]
(Acrylonitrile)
vapor: rat LC50=216ppm/4hr (EU-RAR, 2004)

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]
(Acrylonitrile)
rabbit Draize Score=3.6 (EU-RAR, 2004)

Serious eye damage/irritation

[GHS Cat. Japan, base data]
(Acrylonitrile)
rabbit severe burns (EU-RAR, 2004)

Sensitization

Skin sensitization

[GHS Cat. Japan, base data]
(Acrylonitrile)
cat. 1; DFGOT vol.24, 2007

Mutagenic effects data is not available.

Carcinogenicity

[GHS Cat. Japan, base data]
(Acrylonitrile)
cat.1B; (EU-RAR, 2004)

(Acrylonitrile)
IARC-Gr.2B : Possibly carcinogenic to humans
(Acrylonitrile)
ACGIH-A3(2015) : Confirmed Animal Carcinogen with Unknown Relevance to Humans
(Acrylonitrile)
EU-Category 1B; Substances presumed to have carcinogenic potential for humans

Reproductive toxicity
[GHS Cat. Japan, base data]
(Acrylonitrile)
cat. 1B; DFGOT vol. 24, 2007

STOT
STOT-single exposure
[cat.1]
[GHS Cat. Japan, base data]
(Acrylonitrile)
nerve/nervous system; liver; kidney; blood/blood system (EU-RAR, 2004)
[cat.3 (resp. irrit.)]
[GHS Cat. Japan, base data]
(Acrylonitrile)
respiratory tract irritation (EU-RAR, 2004)
[cat.3 (drow./dizz.)]
[GHS Cat. Japan, base data]
(Acrylonitrile)
narcosis (EU-RAR, 2004)
STOT-repeated exposure
[cat.1]
[GHS Cat. Japan, base data]
(Acrylonitrile)
nerve/nervous system; respiratory apparatus; blood/blood system; testicle; kidney; liver
(NITE primary risk assessment, 2005)

Aspiration hazard data is not available.

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12. Ecological Information

Ecotoxicity
Aquatic toxicity
Toxic to aquatic life
Toxic to aquatic life with long lasting effects
Aquatic acute toxicity component(s) data
[GHS Cat. Japan, base data]
(Acrylonitrile)
Fish (Ctenopharyngodon idellus) LC50＝1.18mg/L/96hr (CICADs 39, 2002)
Aquatic chronic toxicity component(s) data
[GHS Cat. Japan, base data]
(Acrylonitrile)
Fish (fat head minnow) NOEC=0.34mg/L/35days (CICAD 39, 2002)

Water solubility
(Acrylonitrile)
7g/100 ml (20℃) (ICSC, 2001)

Persistence and degradability
(Acrylonitrile)
Not degrade rapidly (BOD_Degradation : 14.7% (EU-RAR, 2004))

Bioaccumulative potential
(Acrylonitrile)

log Pow=0.25 (ICSC, 2001)

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.: 1093

Proper Shipping Name :

ACRYLONITRILE, STABILISED

Class or division : 3

Subsidiary hazard(s) : 6.1

Packing group : I

ERG GUIDE No.: 131P

Special provisions No.: 386

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 1093

Proper Shipping Name :

ACRYLONITRILE, STABILISED

Class or division : 3

Subsidiary hazard(s) : 6.1

Packing group : I

Special provisions No.: 386

IATA Dangerous Goods Regulations

UN No.: 1093

Proper Shipping Name :

ACRYLONITRILE, STABILISED

Class or division : 3

Subsidiary hazard(s) : 6.1

Hazard labels : Flamm.liquid & Toxic

Packing group : I

Special provisions No.: A209

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

Carcinogenicity: cat.1, 1A, 1B

Acrylonitrile

Reproductive toxicity: cat.1, 1A, 1B

Acrylonitrile

Specific target organ toxicity - repeated exposure: cat.1

Acrylonitrile

Hazardous to the aquatic environment - long-term hazard: cat.1, 2

Acrylonitrile

Transport in bulk according to Annex II of MARPOL73/78 and IBC Code

Noxious Liquid ; Cat. Y

Acrylonitrile

Flammable Liquid
Acrylonitrile

15. Regulatory Information

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

US major regulations

TSCA

Acrylonitrile

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
Acute Tox. 3: H301 Toxic if swallowed
Acute Tox. 2: H310 Fatal in contact with skin
Acute Tox. 2: H330 Fatal if inhaled
Skin Irrit. 2: H315 Causes skin irritation
Eye Dam. 1: H318 Causes serious eye damage
Skin Sens. 1: H317 May cause an allergic skin reaction
Carc. 1B: H350 May cause cancer
Repr. 1B: H360 May damage fertility or the unborn child
STOT SE 1: H370 Causes damage to organs after single exposure
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
Aquatic Acute 2: H401 Toxic to aquatic life
Aquatic Chronic 2: H411 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 edit., 2017 UN
IMDG Code, 2018 Edition (Incorporating Amendment 39-18)
IATA Dangerous Goods Regulations (60th Edition) 2019
Classification, labelling and packaging of substances and mixtures (table3-1 ECNO6182012)
2016 EMERGENCY RESPONSE GUIDEBOOK (US DOT)
2019 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 2018).