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Safety Data Sheet

1. Chemical product and company identification

Product name : Acetone

Company information

Name of manufacturer : KANTO CHEMICAL CO., INC.
Address : 2-1, Nihonbashi, Muromachi 2-Chome, Chuo-Ku, Tokyo, 103-0022, Japan
Name of section : Electronic materials division technical department
Telephone number : +81-3-6214-1080
Facsimile number : +81-3-3241-1043
Mail address : el-info@kanto.co.jp
Reference No : GE00001 1.3
Recommended uses and restrictions : Electronic chemicals

2. Hazards identification

GHS classification

Physical hazards	Flammable liquids	Category 2
Health hazards	Serious eye damage/eye irritation	Category 2B
	Reproductive toxicity	Category 2
	Specific target organ toxicity (single exposure)	Category 3 (narcosis)
	Specific target organ toxicity (single exposure)	Category 3 (respiratory tract irritation.)
	Specific target organ toxicity (repeated exposure)	Category 1 (central nervou system, respiratory organs, digestive tract)

Hazard pictograms

Signal word : Danger

Hazard statements :
Highly flammable liquid and vapor
Causes eye irritation
May cause respiratory irritation
May cause drowsiness or dizziness
Suspected of damaging fertility or the unborn child
Causes damage to organs (central nervou system, respiratory organs, digestive tract) through prolonged or repeated exposure

Precautionary statements

Prevention :
Do not handle until all safety precautions have been read and understood.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep container tightly closed.
Ground and bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting equipment.

		Use only non-sparking tools. Take action to prevent static discharges. Do not breathe mist / vapors. Wash hands, forearms and face thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.
Response	:	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water . IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice/attention. Call a POISON CENTER or doctor if you feel unwell. Get medical advice/attention if you feel unwell. If eye irritation persists: Get medical advice/attention.
Storage	:	Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.
Disposal	:	Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

3. Composition/information on ingredients

Distinction of substance or mixture : Substance

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
Acetone	min. 99.8	CH3COCH3	Listed	200-662-2	67-64-1

4. First aid measures

First aid measures

First-aid measures after inhalation	:	Remove the victim to fresh air, and make him blow his nose and gargle.
First-aid measures after skin contact	:	Wash the affected areas under running water.
First-aid measures after eye contact	:	Wash the affected areas under running water for at least 15 minutes. If necessary, get medical treatment.
First-aid measures after ingestion	:	The chemical is volatile. Do not induce vomiting because it increases the risk of aspiration into the lungs. Get medical attention immediately. If necessary, rinse mouth with water.
Personal Protection in First Aid and Measures	:	Rescuers should wear proper protective equipment like rubber gloves, goggles.

Most Important Symptoms/Effects

Symptoms/effects	:	If inhaled the vapor, cause hyper secretion of saliva, face flush, cough, dizziness, lethargy, headache, throat ache, unconsciousness, nausea, vomiting, etc.

5. Fire fighting measures

Suitable extinguishing media	:	Water, dry chemical powder, carbon dioxide, dry sand, alcohol resistant foam
Unsuitable extinguishing media	:	Foam extinguisher
Firefighting instructions	:	Move containers from fire area if it can be done without risk, if not possible, apply water from a safe distance to cool and protect surrounding area. Fight fire from windward. Dry chemical powder, carbon dioxide or dry sand should be used for small fires. Alcohol-resistant foam extinguisher is effective for a large scale fire.
Personal protection (Emergency response)	:	Wear breathing apparatus.

6. Accidental release measures

Personal Precautions, Protective Equipment and Emergency Procedures

General measures	:	Wear proper protective equipment and avoid contact with skin and inhalation of vapor. Conduct operations from upwind and evacuate people downwind. Keep away personnel except for authorized ones from spillage area by stretching ropes.

Environmental precautions

Environmental precautions	:	Attention should be given to avoid discharge of spilled product into rivers and resulting environmental damage. When diluting spill with large amounts of water, discharge of untreated wastewater into the environment must be avoided.

Methods and Equipment for Containment and Cleaning up

For containment	:	Absorb spill with inert material (e.g, diatomaceous earth, sand) and flush spillage area with copious amounts of water.
Prevention Measures for Secondary Accidents	:	Remove nearby sources of ignition and prepare extinguishing media.

7. Handling and storage

Handling

Technical measures	:	Wear proper protective equipment to avoid contact with skin or inhalation of vapor. Fire is strictly prohibited. Ventilate well at working places. Prevent build-up of electrostatic charges (e.g. by grounding).
Precautions for safe handling	:	Use with an enclosed system or a local exhaust ventilation. Use in well-ventilated areas. Do not allow contact with oxidizing substances.

Storage

Storage conditions	:	Store in a dark, cool place and tightly closed.
Material used in packaging/containers	:	Glass, fluorine resin, stainless steel. Do not use vinyl chloride resin, acrylic resin, polystyrene etc.

8. Exposure controls / Personal protection equipment

ACGIH TWA	250 ppm

ACGIH STEL	500 ppm

Appropriate engineering controls : Use with an enclosed system or a local exhaust ventilation.

Protective equipment

Respiratory protection : If necessary, wear gas mask for organic solvents or airline respirator.

Hand protection : Impervious protective gloves

Eye protection : Safety goggles

Skin and body protection : Protective clothing, protective boots

9. Physical and chemical properties

Physical state : Liquid

Color : Colorless.

Odor : Ketone like odor

pH : No data available

Melting point : -94.7 ° C

Freezing point : No data available

Boiling point : 56.12 ° C

Flash point : -17.8 ° C (C.C.)

Auto-ignition temperature : 561 ° C

Decomposition temperature : No data available

Flammability : Flammable

Vapor pressure : 233 hPa (20℃)

Relative density : No data available

Density : 0.79 g/cm³ (20℃)

Relative gas density : 2

Solubility : Water: Miscible. Organic solvents: Miscible with many kinds of organic solvents like ethanol, diethyl ether.

Partition coefficient n-octanol/water (Log Pow) : -0.24

Explosive limits (vol %) : 2.55 - 12.8 vol %

Viscosity, kinematic: : 0.43 mm²/s (20℃)

Particle characteristics : No data available

10. Stability and reactivity

Reactivity : May react with strong oxidizing substances.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : Reacts violently with chromium(VI) oxide, sodium chlorate, hydrogen peroxide, nitric acid and may cause fire.

Conditions to avoid : Light, heat.

Incompatible materials : Strong oxidizing substances.

Hazardous decomposition products : Carbon monoxide.

11. Toxicological information

Acute toxicity (oral)	:	No classification rat LD50>5000mg/kg
Acute toxicity (dermal)	:	No classification rabbit LD50>5000mg/kg
Acute toxicity (inhalation)	:	No classification (gas) No classification (vapor) Classification not possible (dust, mist)
Acute toxicity (vapor) - Description	:	rat LC50=32000ppm/4h
Skin corrosion/irritation	:	No classification Acetone has no irritation to rabbit skin.
Serious eye damage/irritation	:	Causes eye irritation Vapor stimulates human eye. However, if exposure stops, irritation will not follow. The result of severe is reported in the rabbit. Although a corneal epithelium is destroyed, substrate is not destroyed, and destruction of a corneal epithelium will be recovered in 4-6 days. Since acetone is not corrosive eye irritations, it was classified into category 2B.
Respiratory sensitization	:	Classification not possible
Skin sensitization	:	No classification There was observed no skin sensitization in Maximization test using guinea pig.
Germ cell mutagenicity	:	No classification Acetone is negative in vivo micronucleus examination.
Carcinogenicity	:	No classification ACGIH classifies it as the group A4(not classifiable as a human carcinogen).
Reproductive toxicity	:	Suspected of damaging fertility or the unborn child Acetone is describe that it has no effect on abortion by the epidemiologic investigation. But high concentration exposure of acetone for rats (11000ppm (20mg/L)), caused weak developmental toxicity that is decrease in embryonic weight, high concentration exposure of acetone for mice (6600ppm (15.6mg/L)), caused decrease in embryonic weight, later embryo absorption rate. From the above, it was classified into category 2.
STOT-single exposure	:	May cause drowsiness or dizziness May cause respiratory irritation Based on the descriptions of acetone that irritation in the human throat is caused by 12000ppm exposure, that irritation is caused in the nasal cavity, throat and trachea by 1190 and 2400mg/m3/6h exposure to humans, and that irritation was caused in the throat by 1000ppm/4h exposure. Thus, it was classified into category 3 (respiratory tract irritation). From the description that a man who swallowed 200mL of the substance progressed to coma (recovery of consciousness after 12 hours), and a worker who was exposed vapor of 12000ppm suffered from headache, dizziness, weakness of legs, unconsciousness, it was classified into category 3 (narcosis).

STOT-repeated exposure	:	Causes damage to organs (central nervou system, respiratory organs, digestive tract) through prolonged or repeated exposure In humans, there is the description that inflammation was observed in respiratory, stomach and duodenum with dizziness, weakness as the effects of occupational exposure, in worker who was inhalation exposure to 700 ppm of this substance, 3 hours/day for 7 to 15 years. Based on the above mention, it was classified into category 1(central nervous system, respiratory organs, digestive tract).
Aspiration hazard	:	Classification not possible The calculated dynamic viscosity is 0.426mm2/sec and aceton is a ketone of under C13, however, there was not the animal data of chemical pneumonia, it was not possible to classify because of insufficient data.

12. Ecological information

Ecotoxicity

Aquatic acute	:	No classification Pimephales promelas LC50>100mg/L/96h
Aquatic chronic	:	No classification

Persistence and degradability

Readily biodegradable
BOD : 96%

Bioaccumulative potential

Low bioconcentration
log Pow : -0.24

Mobility in soil

High mobility
Koc : 2.4

Hazardous to the ozone layer

Ozone	:	Classification not possible

13. Disposal considerations

Ecology - waste materials	:	Burn in a chemical incinerator equipped with an afterburner and a scrubber. Or entrust approved waste disposal companies with the disposal.
Contaminated container and packaging	:	In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.

14. Transport information

International Regulations

Transport by sea(IMDG)

UN-No. (IMDG)	:	1090
Proper Shipping Name (IMDG)	:	ACETONE
Packing group (IMDG)	:	II
Transport hazard class(es) (IMDG)	:	3

Air transport(IATA)

UN-No. (IATA)	:	1090
Proper Shipping Name (IATA)	:	Acetone
Packing group (IATA)	:	II
Transport hazard class(es) (IATA)	:	3
Marine pollutant	:	Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollutant category	:	Z
MFAG-No	:	127

15. Regulatory information

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

16. Other information

Data sources : Solvents Handbook, T, Asahara el, Kodansha Scientific Ltd. (1976) .
Handbook of dangeroous and hazardous chemicals, Japan Industrial Safety & Health Association. (2000-2001) .
Dangerous Properties of Industrial Materials,6th ed. N.I.Sax Van Nostrand Reinhold Company (1984) .
Handbook of Dangerous Substances Springer-Verlag Tokyo (1991) .
Handbook of 17322 Chemical Products, The Chemical Daily Co. (2022) .
NITE Chemical Risk Information Platform (NITE-CHRIP), National Institute of Technology and Evaluation.

The information contained herein is based on several references and the present state of our knowledge. However the SDS does not always cover all information about the product, handle the product carefully.The information is intended to ordinary usage, in case of particular handlings, conduct appropriate safety measurements.The information herein is only provision of information, and it does not represent a guarantee the properties of the product.The Safety Data Sheet(SDS) is prepared based on JIS Z7253.