Chemical Safety Data Sheet MSDS / SDS

Isopropylamine SDS

Revision Date:2024-04-25 Revision Number:1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product name: Isopropylamine

CAS: 75-31-0

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: For R&D use only. Not for medicinal, household or other use.

Uses advised against: none

Company Identification

Company: Chemicalbook.in

Address: 5 vasavi Layout Basaveswara Nilayam Pragathi Nagar Hyderabad, India -500090

Telephone: +91 9550333722

SECTION 2: Hazards identification

Classification of the substance or mixture

Flammable liquids, Category 1
Skin irritation, Category 2

Eye irritation, Category 2
Specific target organ toxicity – single exposure, Category 3

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger

Hazard statement(s)

H224 Extremely flammable liquid and vapour
H315 Causes skin irritation
H319 Causes serious eye irritation
H335 May cause respiratory irritation

Precautionary statement(s)

Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment.
P242 Use non-sparking tools.
P243 Take action to prevent static discharges.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P264 Wash ... thoroughly after handling.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in a well-ventilated area.

Response

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].
P370+P378 In case of fire: Use ... to extinguish.
P302+P352 IF ON SKIN: Wash with plenty of water/...
P321 Specific treatment (see ... on this label).
P332+P317 If skin irritation occurs: Get medical help.
P362+P364 Take off contaminated clothing and wash it before reuse.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P319 Get medical help if you feel unwell.

Storage

P403+P235 Store in a well-ventilated place. Keep cool.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name:	Isopropylamine
Common names and synonyms:	Isopropylamine
CAS number:	75-31-0
EC number:	200-860-9
Concentration:	100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.

Following skin contact

First rinse with plenty of water for at least 15 minutes, then remove contaminated clothes and rinse again. Refer for medical

attention .

Following eye contact

Rinse with plenty of water for several minutes (remove contact lenses if easily possible). Refer immediately for medical attention.

Following ingestion

Rinse mouth. Give nothing to drink. Do NOT induce vomiting. Refer immediately for medical attention.

Most important symptoms/effects, acute and delayed

Inhalation causes nose and throat irritation, severe coughing, and chest pain due to irritation of air passages; can cause lung edema and loss of consciousness. Ingestion causes nausea, salivation and severe irritation of mouth and stomach. Contact with eyes causes severe irritation and possible edema of the cornea. Contact with skin causes severe irritation. (USCG, 1999)

Indication of immediate medical attention and special treatment needed, if necessary

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR if necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on the left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. /Organic bases/Amines and related compounds/

SECTION 5: Firefighting measures

Suitable extinguishing media

This chemical is a flammable liquid. Poisonous gases including nitrogen oxides and hydrogen cyanide are produced in fire. Use dry chemical, carbon dioxide, or foam extinguishers. Vapors are heavier than air and will collect in low areas. Vapors may travel long distances to ignition sources and flashback. Vapors in confined areas may explode when exposed to fire. Containers may explode in fire. Storage containers and parts of containers may rocket great distances, in many directions. If material or contaminated runoff enters waterways, notify downstream users of potentially contaminated waters. Notify local health and fire officials and pollution control agencies. From a secure, explosion-proof location, use water spray to cool exposed containers. If cooling streams are ineffective (venting sound increases in volume and pitch, tank discolors or shows any digns of deforming), withdraw immediately to a secure position.

Specific hazards arising from the chemical

Special Hazards of Combustion Products: Toxic oxides of nitrogen may form in fire. Behavior in Fire: Burning isopropylamine is

difficult to control because of the ease of reignition of the vapor. Vapors are heavier than air and may travel to a source of ignition and flash back. Containers may explode. (USCG, 1999)

Special protective actions for fire-fighters

Use water in large amounts, powder, alcohol-resistant foam, carbon dioxide. In case of fire: keep drums, etc., cool by spraying with water.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Evacuate danger area! Remove all ignition sources. Consult an expert! Personal protection: complete protective clothing including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Do NOT wash away into sewer. Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

Environmental precautions

Evacuate danger area! Remove all ignition sources. Consult an expert! Personal protection: complete protective clothing including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Do NOT wash away into sewer. Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

Methods and materials for containment and cleaning up

SRP: Wastewater from contaminant suppression, cleaning of protective clothing/equipment, or contaminated sites should be contained and evaluated for subject chemical or decomposition product concentrations. Concentrations shall be lower than applicable environmental discharge or disposal criteria. Alternatively, pretreatment and/or discharge to a permitted wastewater treatment facility is acceptable only after review by the governing authority and assurance that "pass through" violations will not occur. Due consideration shall be given to remediation worker exposure (inhalation, dermal and ingestion) as well as fate during treatment, transfer and disposal. If it is not practicable to manage the chemical in this fashion, it must be evaluated in accordance with EPA 40 CFR Part 261, specifically Subpart B, in order to determine the appropriate local, state and federal requirements for disposal.

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames, NO sparks and NO smoking. Closed system, ventilation, explosion-proof electrical equipment and lighting. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

Conditions for safe storage, including any incompatibilities

Well closed. Fireproof. Provision to contain effluent from fire extinguishing. Separated from food and feedstuffs. See Chemical Dangers. Store in an area without drain or sewer access.Isopropylamine should be stored in a cool, dry, well-ventilated area in tightly sealed containers that are labeled in accordance with OSHA's Hazard Communication Standard [29 CFR 1910.1200]. Containers of isopropylamine should be protected from physical damage and should be stored separately from strong acids, strong oxidizers, perchloryl fluoride, or 1-chloro-1,3- epoxypropane.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

TLV: 5 ppm as TWA; 10 ppm as STEL.MAK: 12 mg/m3, 5 ppm; peak limitation category: I(2); pregnancy risk group: C

Biological limit values

no data available

Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear face shield or eye protection in combination with breathing protection.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Isopropylamine is a clear colorless liquid with an ammonia-like odor. Flash point -35°F. Boiling point 90°F. Less dense than water Vapors heavier than air. Produces toxic oxides of nitrogen during combustion. Used as a solvent and to make other chemicals.
Colour:	Colorless liquid [Note: A gas above 91 degrees F].
Odour:	Ammonia odor
Melting point/freezing point:	-95°C(lit.)
Boiling point or initial boiling point and boiling range:	33°C
Flammability:	Class IA Flammable Liquid: Fl.P. below 73°F and BP below 100°F.
Lower and upper explosion limit/flammability limit:	Lower flammable limit: 2.0% by volume; Upper flammable limit: 10.4% by volume
Flash point:	-20°C(lit.)
Auto-ignition temperature:	756° F (USCG, 1999)
Decomposition temperature:	no data available
pH:	Strong base
Kinematic viscosity:	0.47 mm2/s at 20°C
Solubility:	Very soluble (NTP, 1992)

Partition coefficient n-octanol/water:	log Kow = 0.26
Vapour pressure:	9.2 psi (20 °C)
Density and/or relative density:	0.69
Relative vapour density:	2.04 (vs air)
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

Decomposes on heating. This produces toxic fumes of nitrogen oxides and hydrogen cyanide. Reacts with strong oxidants, acids, acid anhydrides and acid chlorides. Reacts violently with nitroparaffins, halogenated hydrocarbons, oxidants and many other substances. Attacks copper and its compounds, lead, zinc and tin.

Chemical stability

no data available

Possibility of hazardous reactions

Flammable liquid. Vapors are heavier than air and may travel to a source of ignition and flash back. Combustion by-products include oxides of nitrogen.The vapour is heavier than air and may travel along the ground; distant ignition possible.ISOPROPYLAMINE is a colorless, alkaline liquid, very volatile, moderately toxic, highly flammable. Dangerous fire hazard when exposed to heat, flame, sparks, or strong oxidizers. When heated to decomposition it emits toxic fumes of oxides of nitrogen [M. K.]. A mixture of isopropylamine and perchloryl fluoride resulted in an uncontrolled oxidation and/or explosion, [J. Org. Chem., 1980, 45, 4036]. The reaction of 1-chloro-2,3-epoxypropane and the amine and most probably other nitrogen bases, yields a violent exotherm, [Chem. & Ind., 1971, 994].

Conditions to avoid

no data available

Incompatible materials

Reacts with acids, aldehydes, ketones, epoxides, and oxidizing agents.

Hazardous decomposition products

Thermal decomposition products: ammoniac, nitrogen oxide, carbon monoxide. Combustion occurs nitriles and cyanides derivatives. /Aqueous solution of isopropylamine at 70%v/v/

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 Rat oral 820 mg/kg

Inhalation: LC50 Rat inhalation 9.8 mg/L for 4 hr

Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

The substance is corrosive to the eyes, skin and respiratory tract. Corrosive on ingestion. Inhalation may cause lung oedema, but only after initial corrosive effects on eyes and/or airways have become manifest. If swallowed the substance easily enters the airways and could result in aspiration pneumonitis. Exposure above the OEL could cause death.

STOT-repeated exposure

Repeated or prolonged contact with skin may cause dermatitis.

Aspiration hazard

A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.

SECTION 12: Ecological information

Toxicity

Toxicity to fish: LC50; Species: Onchorhynchus mykiss (Rainbow trout); Conditions: static; Concentration: 40 mg/L for 48 hr /Isopropylamin, chemically pure

Toxicity to daphnia and other aquatic invertebrates: EC50; Species: Daphnia magna (Water flea); Concentration: 20.8 mg/L for 48 hr; Effect: inhibition of mobility /Conditions of bioassay not specified in source examined

Toxicity to algae: EC50; Species: Scenedesmus subspicatus (Green algae); Concentration: 1.2 mg/L for 96 hr; Effect: growth inhbition /Conditions of bioassay not specified in source examined

Toxicity to microorganisms: no data available

Persistence and degradability

AEROBIC: An aerobic screening test, which utilized activated sludge for inocula, suggests isopropylamine should biodegrade rapidly in the environment(1). Isopropylamine was completely degraded within a 2 day period(1). However, isopropylamine may be toxic to micro-organisms at high concentration(2). After 8 days, an initial concentration of 500 ppm was reduced by 10% in a closed bottle inoculated with a microbial population of 5000 mg/L from activated sludge acclimated to aniline, and maintained at 20 deg C(2). 100 mg/L of isopropylamine was 70-80% degraded afer 28 days in an OECD 301F test(3). This test shows that isopropylamine is readily biodegradable. Isopropylamine showed greater than 95% degradation after 10 days using industrial, non-adapted sludge in a OECD 302B test(3). This test indicates that isopropylamine is inherently biodegradable(3).

Bioaccumulative potential

An estimated BCF of 0.50 was calculated in fish for isopropylamine(SRC), using a measured log Kow of 0.26(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low (SRC), provided the compound is not metabolized by the organism(SRC).

Mobility in soil

The pKa of isopropylamine is 10.6(1), indicating that this compound will exist almost entirely in the cation form in the environment. Cations generally adsorb more strongly to soils containing organic carbon and clay than their neutral counterparts(2), suggesting that the mobility in soil will be low(SRC).

Other adverse effects

no data available

SECTION 13: Disposal considerations

Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

UN Number

ADR/RID: UN1221 (For reference only, please check.)
IMDG: UN1221 (For reference only, please check.)
IATA: UN1221 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: ISOPROPYLAMINE (For reference only, please check.)
IMDG: ISOPROPYLAMINE (For reference only, please check.)
IATA: ISOPROPYLAMINE (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 3 (For reference only, please check.)
IMDG: 3 (For reference only, please check.)
IATA: 3 (For reference only, please check.)

Packing group, if applicable

ADR/RID: I (For reference only, please check.)
IMDG: I (For reference only, please check.)
IATA: I (For reference only, please check.)

Environmental hazards

ADR/RID: No
IMDG: No
IATA: No

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

European Inventory of Existing Commercial Chemical Substances (EINECS)

Listed.

EC Inventory

Listed.

United States Toxic Substances Control Act (TSCA) Inventory

Listed.

China Catalog of Hazardous chemicals 2015

Listed.

New Zealand Inventory of Chemicals (NZIoC)

Listed.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Listed.

Korea Existing Chemicals List (KECL)

Listed.

SECTION 16: Other information

Abbreviations and acronyms

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

References

IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home

HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm

IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple

ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg

Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp

ECHA - European Chemicals Agency, website: https://echa.europa.eu/