

ACR11128

Cyclohexylamine

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

产品说明: 环己胺
Product Description: Cyclohexylamine

Cat No. : 111280000; 111280010; 111280025; 111280050; 111282500
CAS No 108-91-8
Molecular Formula C6 H13 N

Supplier

UK entity/business name
Fisher Scientific UK
Bishop Meadow Road,
Loughborough, Leicestershire LE11 5RG, United Kingdom
General info; Tel: +44 (0)1509 231166

EU entity/business name
Acros Organics BVBA
Janssen Pharmaceuticaaan 3a, 2440 Geel, Belgium
General Info; Tel: +32-14-57 52 11 (info@acros.com)
Technical Support; Tel +32-14-56 56 00 (acros.techsupport@thermofisher.com)

Emergency Telephone Number For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99
CHEMTREC Tel. No.**US**:001-800-424-9300 / **Europe**:001-703-527-3887

E-mail address begel.sdsdesk@thermofisher.com

Recommended Use Laboratory chemicals.
Uses advised against No Information available

SECTION 2. HAZARD IDENTIFICATION

Physical State
Liquid

Appearance
Colorless

Odor
Fishy

Emergency Overview

Flammable liquid and vapor. Causes severe skin burns and eye damage. Suspected of damaging fertility or the unborn child.
Harmful if swallowed. Toxic in contact with skin.

Classification of the substance or mixture

Flammable liquids.	Category 3
Acute Oral Toxicity	Category 4
Acute Dermal Toxicity	Category 3
Skin Corrosion/Irritation	Category 1 B
Serious Eye Damage/Eye Irritation	Category 1
Reproductive Toxicity	Category 2

Label Elements

Cyclohexylamine

**Signal Word****Danger****Hazard Statements**

H226 - Flammable liquid and vapor
 H314 - Causes severe skin burns and eye damage
 H302 - Harmful if swallowed
 H311 - Toxic in contact with skin
 H361 - Suspected of damaging fertility or the unborn child

Precautionary Statements**Prevention**

P201 - Obtain special instructions before use
 P202 - Do not handle until all safety precautions have been read and understood
 P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
 P243 - Take precautionary measures against static discharge
 P240 - Ground/bond container and receiving equipment
 P241 - Use explosion-proof electrical/ ventilating/ lighting equipment
 P242 - Use non-sparking tools
 P270 - Do not eat, drink or smoke when using this product
 P271 - Use only outdoors or in a well-ventilated area
 P260 - Do not breathe dust/fume/gas/mist/vapors/spray
 P264 - Wash face, hands and any exposed skin thoroughly after handling
 P281 - Use personal protective equipment as required

Response

P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
 P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 P310 - Immediately call a POISON CENTER or doctor/physician
 P330 - Rinse mouth
 P331 - Do NOT induce vomiting
 P363 - Wash contaminated clothing before reuse
 P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction

Storage

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

Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

Physical and Chemical Hazards

Vapors may cause flash fire or explosion. Flammable liquid.

Health Hazards

Corrosive. Causes skin and eye burns. Causes serious eye damage. Suspected of damaging fertility or the unborn child. Harmful if swallowed. Toxic in contact with skin.

Environmental hazards

Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants. . Will likely be mobile in the environment due to its water solubility. The product is water soluble, and may spread in water systems.

Other Hazards

Toxic to terrestrial vertebrates.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS
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SAFETY DATA SHEET

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Component	CAS No	Weight %
Cyclohexylamine	108-91-8	>95

SECTION 4. FIRST AID MEASURES

General Advice

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Skin Contact

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is required.

Inhalation

If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Remove to fresh air. Immediate medical attention is required.

Ingestion

Do NOT induce vomiting. Call a physician or poison control center immediately.

Most important symptoms and effects

Causes burns by all exposure routes. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

Self-Protection of the First Aider

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

Notes to Physician

Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Water mist may be used to cool closed containers. CO₂, dry chemical, dry sand, alcohol-resistant foam.

Extinguishing media which must not be used for safety reasons

No information available.

Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes. Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions

Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away

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from and upwind of spill/leak. Remove all sources of ignition. Take precautionary measures against static discharges.

Environmental Precautions

Should not be released into the environment. Do not flush into surface water or sanitary sewer system.

Methods for Containment and Clean Up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

Refer to protective measures listed in Sections 8 and 13.

SECTION 7. HANDLING AND STORAGE**Handling**

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Take precautionary measures against static discharges.

Storage

Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Keep away from heat, sparks and flame.

Specific Use(s)

Use in laboratories

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Control Parameters**

Component	China	Taiwan	Hong Kong	The United Kingdom
Cyclohexylamine	TWA: 10 mg/m ³ STEL: 20 mg/m ³	TWA: 10 ppm TWA: 41 mg/m ³	-	STEL: 30 ppm 15 min STEL: 123 mg/m ³ 15 min TWA: 10 ppm 8 hr TWA: 41 mg/m ³ 8 hr

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	European Union
Cyclohexylamine	TWA: 10 ppm	(Vacated) TWA: 10 ppm (Vacated) TWA: 40 mg/m ³	TWA: 10 ppm TWA: 40 mg/m ³	

Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. MDHS70 General methods for sampling airborne gases and vapours MDHS 88 Volatile organic compounds in air. Laboratory method using diffusive samplers, solvent desorption and gas chromatography MDHS 96 Volatile organic compounds in air - Laboratory method using pumped solid sorbent tubes, solvent desorption and gas chromatography

Exposure Controls**Engineering Measures**

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting equipment. Ensure adequate ventilation, especially in confined areas. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source.

Personal protective equipment

Eye Protection	Goggles (European standard - EN 166)
Hand Protection	Protective gloves

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Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Nitrile rubber PVC Viton (R)	See manufacturers recommendations	-	EN 374	(minimum requirement)

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

Skin and body protection	Long sleeved clothing
Respiratory Protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly
Large scale/emergency use	Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced Recommended Filter type: Particulates filter conforming to EN 143 Ammonia and organic ammonia derivatives filter Type K Green conforming to EN14387
Small scale/Laboratory use	Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. Recommended half mask:- Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141 When RPE is used a face piece Fit Test should be conducted
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.
Environmental exposure controls	Prevent product from entering drains.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Colorless	
Physical State	Liquid	
Odor	Fishy	
Odor Threshold	No data available	
pH	11.5	100 g/L aq.sol
Melting Point/Range	-17 °C / 1.4 °F	
Softening Point	No data available	
Boiling Point/Range	133 - 134 °C / 271.4 - 273.2 °F	
Flash Point	27 °C / 80.6 °F	Method - CC (closed cup)
Evaporation Rate	No data available	
Flammability (solid,gas)	Not applicable	Liquid
Explosion Limits	Lower 1.6 vol% Upper 9.4 vol%	
Vapor Pressure	13 mbar @ 20 °C	
Vapor Density	No data available	(Air = 1.0)
Specific Gravity / Density	0.867	
Bulk Density	Not applicable	Liquid
Water Solubility	Soluble in water	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Component	log Pow	
Cyclohexylamine	3.7	

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Autoignition Temperature	293 - °C / 559.4 - °F	
Decomposition Temperature	No data available	
Viscosity	2.4 mPa.s @ 20°C	
Explosive Properties		explosive air/vapour mixtures possible
Oxidizing Properties	No information available	
Molecular Formula	C6 H13 N	
Molecular Weight	99.18	

SECTION 10. STABILITY AND REACTIVITY

Stability	Stable under normal conditions.
Hazardous Reactions	None under normal processing.
Hazardous Polymerization	Hazardous polymerization does not occur.
Conditions to Avoid	Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition.
Materials to avoid	Strong oxidizing agents.
Hazardous Decomposition Products	Carbon monoxide (CO). Carbon dioxide (CO ₂). Nitrogen oxides (NO _x). Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 11. TOXICOLOGICAL INFORMATION

Product Information

(a) acute toxicity;

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Cyclohexylamine	LD50 = 432 mg/kg (Rat)	277 mg/kg (Rabbit)	LC50 = 1000 ppm (Rat) 16 h

(b) skin corrosion/irritation;

Test method	Category 1 B
Test species	Test method BASF rabbit
Observational endpoint	Corrosive

(c) serious eye damage/irritation; Category 1

(d) respiratory or skin sensitization;

Respiratory	Based on available data, the classification criteria are not met
Skin	Based on available data, the classification criteria are not met

(e) germ cell mutagenicity;

Based on available data, the classification criteria are not met

(f) carcinogenicity;

Based on available data, the classification criteria are not met
There are no known carcinogenic chemicals in this product

(g) reproductive toxicity;

Category 2

(h) STOT-single exposure;

Based on available data, the classification criteria are not met

SAFETY DATA SHEET

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(i) STOT-repeated exposure; Based on available data, the classification criteria are not met

Target Organs None known.

(j) aspiration hazard; Based on available data, the classification criteria are not met

Symptoms / effects, both acute and delayed Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity effects Do not empty into drains. Contains a substance which is: Harmful to aquatic organisms. The product contains following substances which are hazardous for the environment.

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Cyclohexylamine	LC50: 44 - 90 mg/L, 96h (Oncorhynchus mykiss) LC50: = 470 mg/L, 96h static (Brachydanio rerio)		EC50: = 20 mg/L, 96h (Pseudokirchneriella subcapitata) EC50: = 20 mg/L, 96h static (Pseudokirchneriella subcapitata)	EC50 = 120 mg/L 30 min

Persistence and Degradability Readily biodegradable
Persistence Persistence is unlikely.
Degradation in sewage treatment plant Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

Bioaccumulative Potential Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Cyclohexylamine	3.7	No data available

Mobility in soil The product is water soluble, and may spread in water systems Will likely be mobile in the environment due to its water solubility Highly mobile in soils

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors
Persistent Organic Pollutant This product does not contain any known or suspected substance
Ozone Depletion Potential This product does not contain any known or suspected substance

SECTION 13. DISPOSAL CONSIDERATIONS

Waste from Residues/Unused Products Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

Contaminated Packaging Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.

Other Information Waste codes should be assigned by the user based on the application for which the product was used. Do not flush to sewer. Can be landfilled or incinerated, when in compliance with local regulations. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms. Solutions with high pH-value must be neutralized before discharge.

SECTION 14. TRANSPORT INFORMATION

Road and Rail Transport

UN-No UN2357
 Proper Shipping Name CYCLOHEXYLAMINE
 Hazard Class 8
 Subsidiary Hazard Class 3
 Packing Group II

IMDG/IMO

UN-No UN2357
 Proper Shipping Name CYCLOHEXYLAMINE
 Hazard Class 8
 Subsidiary Hazard Class 3
 Packing Group II

IATA

UN-No UN2357
 Proper Shipping Name CYCLOHEXYLAMINE
 Hazard Class 8
 Subsidiary Hazard Class 3
 Packing Group II

Special Precautions for User No special precautions required

SECTION 15. REGULATORY INFORMATION

International Inventories

X = listed, China (IECSC), Europe (EINECS/ELINCS/NLP), U.S.A. (TSCA), Canada (DSL/NDL), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), Korea (KECL).

Component	The Inventory of Hazardous Chemicals (2015 Edition)	List of dangerous goods GB 12268 - 2012	TCSI	IECSC	EINECS	TSCA	DSL	PICCS	ENCS	ISHL	AICS	KECL
Cyclohexylamine	X	X	X	X	203-629-0	X	X	X	X	X	X	KE-09215

National Regulations

SECTION 16. OTHER INFORMATION

Creation Date 22-Sep-2009
 Revision Date 22-Feb-2022
 Revision Summary Not applicable.

Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

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First aid for chemical exposure, including the use of eye wash and safety showers.

Legend

CAS - Chemical Abstracts Service

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

DNEL - Derived No Effect Level

RPE - Respiratory Protective Equipment

LC50 - Lethal Concentration 50%

NOEC - No Observed Effect Concentration

PBT - Persistent, Bioaccumulative, Toxic

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer Predicted No Effect Concentration (PNEC)

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%

POW - Partition coefficient Octanol:Water

VPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road

IMO/MDG - International Maritime Organization/International Maritime Dangerous Goods Code

OECD - Organisation for Economic Co-operation and Development

BCF - Bioconcentration factor

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

MARPOL - International Convention for the Prevention of Pollution from Ships

ATE - Acute Toxicity Estimate

VOC (volatile organic compound)

Key literature references and sources for data

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet