Chemical Safety Data Sheet MSDS / SDS

Hexafluoroacetone 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: Hexafluoroacetone

CAS: 684-16-2

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

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SECTION 2: Hazards identification

Classification of the substance or mixture

Skin corrosion, Sub-category 1A

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger

Hazard statement(s)

H280 Contains gas under pressure; may explode if heated
H314 Causes severe skin burns and eye damage
H330 Fatal if inhaled

Precautionary statement(s)

Prevention

P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash ... thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

Response

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P363 Wash contaminated clothing before reuse.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P316 Get emergency medical help immediately.
P321 Specific treatment (see ... on this label).
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage

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:	Hexafluoroacetone
Common names and synonyms:	Hexafluoroacetone
CAS number:	684-16-2
EC number:	211-676-3
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

Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention . ON FROSTBITE: rinse with plenty of water, do NOT remove clothes.

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

Most important symptoms/effects, acute and delayed

Excerpt from ERG Guide 125 [Gases - Corrosive]: TOXIC; may be fatal if inhaled, ingested or absorbed through skin. Vapors are extremely irritating and corrosive. Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite. Fire will produce irritating, corrosive and/or toxic gases. Runoff from fire control may cause pollution. (ERG, 2016)

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

Absorption, Distribution and Excretion

Most of an injected dose of radiolabeled HFA was excreted by the rat rapidly and unmetabolized in the urine, and no unusual accumulation or retention of HFA occurred in the testes.

SECTION 5: Firefighting measures

Suitable extinguishing media

Excerpt from ERG Guide 125 [Gases - Corrosive]: SMALL FIRE: Dry chemical or CO2. LARGE FIRE: Water spray, fog or regular foam. Move containers from fire area if you can do it without risk. Do not get water inside containers. Damaged cylinders should be handled only by specialists. FIRE INVOLVING TANKS: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Do not direct water at source of leak or safety devices; icing may occur. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. (ERG, 2016)

Specific hazards arising from the chemical

Excerpt from ERG Guide 125 [Gases - Corrosive]: Some may burn but none ignite readily. Vapors from liquefied gas are initially heavier than air and spread along ground. Some of these materials may react violently with water. Cylinders exposed to fire may vent and release toxic and/or corrosive gas through pressure relief devices. Containers may explode when heated. Ruptured cylinders may rocket. For UN1005: Anhydrous ammonia, at high concentrations in confined spaces, presents a flammability risk if a source of ignition is introduced. (ERG, 2016)

Special protective actions for fire-fighters

In case of fire in the surroundings, use appropriate extinguishing media. In case of fire: keep cylinder cool by spraying with water.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Evacuate danger area! Consult an expert! Personal protection: complete protective clothing including self-contained breathing apparatus. Ventilation. Remove gas with fine water spray.

Environmental precautions

Evacuate danger area! Consult an expert! Personal protection: complete protective clothing including self-contained breathing

apparatus. Ventilation. Remove gas with fine water spray.

Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

SECTION 7: Handling and storage

Precautions for safe handling

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

Fireproof if in building. Cool.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

TLV: 0.1 ppm as TWA; (skin)

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 safety spectacles, face shield or eye protection in combination with breathing protection.

Skin protection

Cold-insulating 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:	Hexafluoroacetone is a colorless, toxic, and highly reactive gas. At ambient temperatures, it is likely to generate a considerable amount of vapor. It is an irritant to skin, eyes and mucous membranes and is toxic by ingestion, skin absorption, and inhalation. When heated to high temperatures it emits toxic fluoride fumes. Prolonged exposure of the container to fire or intense heat may cause it to violently rupture and rocket. It is used in the production of other chemicals.
Colour:	COLORLESS GAS
Odour:	MUSTY ODOR BECOMES ACRID IN PRESENCE OF ACIDIC IMPURITIES
Melting point/freezing point:	-129°C
Boiling point or initial boiling point and boiling range:	?26°C(lit.)
Flammability:	Nonflammable Gas, but highly reactive with water & other substances, releasing heat.
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	no data available

Auto-ignition temperature:	no data available
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	no data available
Solubility:	Reacts with water (NIOSH, 2016)
Partition coefficient n-octanol/water:	Log Kow = 1.46
Vapour pressure:	4525 mm Hg (21.1 °C)
Density and/or relative density:	1.32 g/cm3
Relative vapour density:	1.65 (vs air)
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

Decomposes at 550°C. This produces toxic and corrosive fumes. Reacts vigorously with water and moisture. This produces a highly acidic hydrate. Attacks glass and most metals.

Chemical stability

no data available

Possibility of hazardous reactions

The gas is heavier than air.HEXAFLUOROACETONE is incompatible with the following: Water, acids [Note: Hygroscopic (i.e., absorbs moisture from the air); reacts with moisture to form a highly acidic sesquihydrate.] (NIOSH, 2016).

Conditions to avoid

no data available

Incompatible materials

Water and acids. [Note: Hygroscopic (ie, absorbs moisture from the air); reacts with moisture to form a highly acidic sesquihydrate.]

Hazardous decomposition products

Dangerous; when heated to decomp, or on contact with acid or acid fumes, they emit highly toxic fumes. fluorides

SECTION 11: Toxicological information

Acute toxicity

Oral: no data available

Inhalation: no data available

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 severely irritating to the eyes, skin and respiratory tract. Inhalation of this gas may cause lung oedema. See Notes. Rapid evaporation of the liquid may cause frostbite. The effects may be delayed. Medical observation is indicated.

STOT-repeated exposure

Animal tests show that this substance possibly causes malformations in human babies. Animal tests show that this substance possibly causes toxic effects upon human reproduction.

Aspiration hazard

A harmful concentration of this gas in the air will be reached very quickly on loss of containment.

SECTION 12: Ecological information

Toxicity

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

Persistence and degradability

no data available

Bioaccumulative potential

A BCF of 8 was calculated for 1,1,1,3,3,3-hexafluoro-2-propanone, using an experimental log Kow of 1.46(1) and a recommended regression-derived equation(2,SRC). This BCF value suggests that 1,1,1,3,3,3-hexafluoro-2-propanone will not bioconcentrate in aquatic organisms(2,SRC).

Mobility in soil

Based on an experimental log Kow of 1.46(1), the Koc of 1,1,1,3,3,3-hexafluoro-2-propanone is estimated as approximately 150 using a regression-derived equation(2,SRC). According to a suggested classification scheme(3), this estimated Koc value suggests that 1,1,1,3,3,3-hexafluoro-2-propanone has moderate mobility in soil(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: UN2552 (For reference only, please check.)
IMDG: UN2552 (For reference only, please check.)
IATA: UN2552 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: HEXAFLUOROACETONE HYDRATE, LIQUID (For reference only, please check.)
IMDG: HEXAFLUOROACETONE HYDRATE, LIQUID (For reference only, please check.)
IATA: HEXAFLUOROACETONE HYDRATE, LIQUID (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.)
IMDG: 6.1 (For reference only, please check.)
IATA: 6.1 (For reference only, please check.)

Packing group, if applicable

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

Not Listed.

IECSC)

Not 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/

Other Information

The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort.Rest and medical observation is therefore essential.Immediate administration of an appropriate spray, by a doctor or a person authorized by him/her, should be considered.