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Version number 1

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier****Trade name:** Hexafluoroisopropanol**Article number:** HFIP STD**EC number:**

213-059-4

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

No further relevant information available.

1.3 Details of the supplier of the safety data sheet**Manufacturer/Supplier:**

DAIKIN INDUSTRIES, LTD. CHEMICALS DIVISION:

OSAKA UMEDA TWIN TOWERS SOUTH, 1-13-1 Umeda, Kita-ku, Osaka-shi, Osaka, 530-0001, Japan

Phone: +81-6-6147-9702 Fax: +81-6-6147-9807

Further information obtainable from: <http://www.daikin.com/>**1.4 Emergency telephone number:**

Japan: +81-6-6349-7521

China: +86-532-8388-9090, +86-21-34151689

South Korea: +82-2-568-1722

Americas: CHEMTREC +1-800-424-9300 (Outside US/Canada: +1-703-527-3887)

Europe: +49-211-179 225-0

*** SECTION 2: Hazard identification****2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

Skin Corr. 1A H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.

2.2 Label elements**Labelling according to Regulation (EC) No 1272/2008:**

The substance is classified and labelled according to the CLP regulation.

Signal word: Danger**Hazard-determining components of labelling:**

1,1,1,3,3,3-Hexafluoro-2-propanol

Precautionary statements:

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or 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/doctor.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

*** SECTION 3: Composition/information on ingredients****Information on ingredients:**

CAS: 920-66-1 1,1,1,3,3,3-Hexafluoropropan-2-ol

≥99%

Repr. 2, H361; STOT RE 2, H373

Skin Corr. 1A, H314; Eye Dam. 1, H318

Identification number(s)**EC number:** 213-059-4

Printing date 23.03.2023

Version number 1

Revision: 23.03.2023

Trade name: Hexafluoroisopropanol*** SECTION 4: First aid measures****4.1 Description of first aid measures****General information:** Seek medical treatment.**After inhalation:** Supply fresh air; consult doctor in case of complaints.**After skin contact:**

Remove contaminated clothes immediately.

Immediately wash with water and soap and rinse thoroughly.

Consult a doctor in case of complaints.

After eye contact:

Immediately rinse with a lot of water for several minutes. Remove contact lenses if possible. Continue rinsing.

Consult an ophthalmologist in case of complaints.

After swallowing:

Rinse mouth with water. Do not induce vomiting.

Consult a doctor in case of complaints.

4.2 Most important symptoms and effects, both acute and chronic: No further relevant information available.**4.3 Indication of any immediate medical attention and special treatment needed:**

No further relevant information available.

SECTION 5: Firefighting measures**5.1 Extinguishing media****Suitable extinguishing agents:** Use fire extinguishing methods suitable for surrounding conditions.**5.2 Special hazards arising from the substance or mixture:**

Formation of toxic gases is possible during heating or in case of fire.

5.3 Advice for firefighters:**Protective equipment:**

Wear fully protective suit.

Wear self-contained breathing apparatus and protective suit.

Do not inhale explosion gases or combustion gases.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures:**

Ensure adequate ventilation before entering the area.

Stay on the windward side.

Keep out unauthorized persons.

Wear appropriate protective devices (See Section 8 Exposure Controls/Personal Protection).

Avoid contact with eyes and skin.

Do not swallow the product.

6.2 Environmental precautions: Prevent seepage into sewage system, workpits and cellars.**6.3 Methods and material for containment and cleaning up:**

For a small amount of leakage: Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders) or collect in an empty container that can be sealed tightly.

For a large amount of leakage: Enclose with banks to avoid outflow. Lead the leakage to a safe place and collect.

6.4 Reference to other sections:

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage**7.1 Precautions for safe handling:**

Ensure good ventilation/exhaustion at the workplace.

Do not handle until all safety precautions have been read and understood.

Information about fire - and explosion protection: Keep ignition sources away - Do not smoke.

Printing date 23.03.2023

Version number 1

Revision: 23.03.2023

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Store in a cool and dry location.

Prevent any seepage into the ground.

Keep containers tightly sealed.

Information about storage in one common storage facility:

See section 10 for information on incompatible materials.

Further information about storage conditions:

Store in cool, dry conditions in well sealed receptacle.

Protect from heat and direct sunlight.

Store containers in a well ventilated area.

Store locked up.

7.3 Specific end use(s): No further relevant information available.*** SECTION 8: Exposure controls/personal protection****8.1 Control parameters** No further information available.**Ingredients with limit values that require monitoring at the workplace:** Not required.**DNELs:****CAS: 920-66-1 1,1,1,3,3,3-Hexafluoro-2-propanol**Inhalative DNEL - consumer 0.174 mg/m³ (Estimate)
long-term exposure**8.2 Exposure controls****Appropriate engineering controls** No further data; see item 7.**Individual protection measures, such as personal protective equipment****General protective and hygienic measures:**

Wash hands before breaks and at the end of work.

Do not eat or drink while working.

Keep away from tobacco products.

Respiratory protection:

Use respiratory protective device with filters for organic and acid gas (or airline respirators in some cases) if formation of toxic gases is possible while the product is heated.

Use respiratory protective device with organic gas cartridge.

Hand protection

Protective gloves

Material of gloves: Rubber**Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye/face protection

Safety glasses

Body protection: Protective work clothing*** SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties****General Information****Physical state**

Fluid

Colour:

Colourless

Odour:

Unpleasant

Odour threshold:

Not determined.

Printing date 23.03.2023

Version number 1

Revision: 23.03.2023

Trade name: Hexafluoroisopropanol

Melting point/freezing point:	-4 °C
Boiling point or initial boiling point and boiling range	59 °C (0.1MPa)
Flammability	Not applicable.
Lower and upper explosion limit	
Lower explosive limit:	No further information available.
Upper explosive limit:	Not determined.
Flash point:	Not applicable.
Decomposition temperature:	No further information available. Not determined.
pH at 20 °C	6.1 (10% aq.)
Viscosity:	
Kinematic viscosity	Not determined.
Dynamic:	Not determined.
Solubility	
water:	No further information available. Not determined.
Partition coefficient n-octanol/water (log value)	No further information available. Not determined.
Vapour pressure:	No further information available.
Density and/or relative density	
Density at 20 °C:	1.596 g/cm ³
Relative density	Not determined.
Vapour density	Not determined.
Particle characteristics	No further information available.
9.2 Other information:	
Form:	Liquid
Auto-ignition temperature:	Not determined.
Explosive properties:	Product does not present an explosion hazard.
Evaporation rate	Not determined.
Information with regard to physical hazard classes	
Explosives	Not applicable
Flammable gases	Not applicable
Aerosols	Not applicable
Oxidising gases	Not applicable
Gases under pressure	Not applicable
Flammable liquids	Not applicable
Flammable solids	Not applicable
Self-reactive substances and mixtures	Not applicable
Pyrophoric liquids	Not applicable
Pyrophoric solids	Not applicable
Self-heating substances and mixtures	Not applicable
Substances and mixtures, which emit flammable gases	
in contact with water	Not applicable
Oxidising liquids	Not applicable
Oxidising solids	Not applicable
Organic peroxides	Not applicable
Corrosive to metals	Not applicable
Desensitised explosives	Not applicable

SECTION 10: Stability and reactivity**10.1 Reactivity** No further relevant information available.**10.2 Chemical stability****Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.**10.3 Possibility of hazardous reactions:** No dangerous reactions known under normal conditions of use.**10.4 Conditions to avoid:** Keep away from heat, sparks, flame, high temperature.**10.5 Incompatible materials:**

Strong acids, strong alkalis, alkali metals, alkali earth metals, powdered aluminium, zinc, beryllium.

Printing date 23.03.2023

Version number 1

Revision: 23.03.2023

Trade name: Hexafluoroisopropanol**10.6 Hazardous decomposition products:** Danger of toxic fluorine based pyrolysis products.*** SECTION 11: Toxicological information****11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008***Acute toxicity* Based on available data, the classification criteria are not met.**LD/LC50 values relevant for classification:****CAS: 920-66-1 1,1,1,3,3,3-Hexafluoro-2-propanol**

Oral LD50 600 mg/kg (Mouse)

Inhalative LC50/4h 1974 ppm (Rat)

Skin corrosion/irritation:

Causes severe skin burns and eye damage.

Serious eye damage/irritation:

Causes serious eye damage.

Respiratory or skin sensitisation: No further information available.**Germ cell mutagenicity:** Based on available data, the classification criteria are not met.**Carcinogenicity:** No further information available.**Reproductive toxicity:** No further information available.**STOT-single exposure:** Based on available data, the classification criteria are not met.**STOT-repeated exposure:** No further information available.**Aspiration hazard:** No further information available.**Subacute to chronic toxicity:** No further information available.**11.2 Information on other hazards:****Endocrine disrupting properties:**

Substance is not listed.

*** SECTION 12: Ecological information****12.1 Toxicity****Aquatic toxicity:****CAS: 920-66-1 1,1,1,3,3,3-Hexafluoro-2-propanol**

LC50/96h 244 mg/l (Fish)

LC50/48h 270 mg/l (Fish) (MITI 1992)

920-66-1 1,1,1,3,3,3,-Hexafluoro-2-propanol

LC50/48 h 270 mg/l (Japanese rice fish) (MITI 1992)

LC50/94 h 244 mg/l (fathead minnow)

12.2 Persistence and degradability:

This product will persist in the environment. Handle with care in case of accidental release or disposal.

CAS: 920-66-1 1,1,1,3,3,3-Hexafluoro-2-propanolBiodegradation 0 % (Microorganisms) (OECD 301C)
(MITI 1992)**12.3 Bioaccumulative potential:****CAS: 920-66-1 1,1,1,3,3,3-Hexafluoro-2-propanol**

BCF < 2.7 (Fish)

12.4 Mobility in soil: No further relevant information available.**12.5 Results of PBT and vPvB assessment****PBT:** No further relevant information available.**vPvB:** No further relevant information available.**12.6 Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.**12.7 Other adverse effects:****Ecotoxicological effects:** no data**Additional ecological information:****General notes:** Must not reach sewage water or drainage ditch undiluted or unneutralised.

Printing date 23.03.2023

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SECTION 13: Disposal considerations**13.1 Waste treatment methods****Recommendation:**

Wear appropriate protective devices.

Disposal must be made according to official regulations.

Uncleaned packaging**Recommendation:**

Empty contaminated packagings thoroughly.

Disposal must be made according to official regulations.

*** SECTION 14: Transport information****14.1 UN number or ID number**

ADR, IMDG, IATA

UNI760

14.2 UN proper shipping name:

ADR, IMDG, IATA

CORROSIVE LIQUID, N.O.S.

14.3 Transport hazard class(es):

ADR, IMDG, IATA

**Class:**

8 Corrosive substances.

14.4 Packing group:

ADR, IMDG, IATA

I

14.5 Environmental hazards:**Marine pollutant:**

No

14.6 Special precautions for user:

Warning: Corrosive substances.

EMS Number:

F-A,S-B

14.7 Maritime transport in bulk according to IMO instruments

Not applicable.

Transport/Additional information:

Avoid direct sunlight. Make sure of no damage, corrosion, leaks on the receptacles.

Take necessary measures for preventing cargo shift.

ADR**Limited quantities (LQ):**

0

Excepted quantities (EQ)

Code: E0

Not permitted as Excepted Quantity

UN "Model Regulation":

UN 1760 CORROSIVE LIQUID, N.O.S., 8, I

*** SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

No further relevant information available.

Labelling according to Regulation (EC) No 1272/2008

The substance is classified and labelled according to the CLP regulation.

Hazard pictograms

GHS05

Signal word Danger**Hazard-determining components of labelling:**

1,1,1,3,3,3-Hexafluoro-2-propanol

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Version number 1

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Trade name: Hexafluoroisopropanol**Hazard statements***H314 Causes severe skin burns and eye damage.***Precautionary statements***P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or 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/doctor.**P405 Store locked up.**P501 Dispose of contents/container in accordance with local/regional/national/international regulations.**National regulations No further information available.**15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.***SECTION 16: Other information**

The product is for the industrial use only. We do not guarantee the safety in case the product is used for the other purposes. When using the product for health-care application or food/feed application, consult us in advance. This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Department issuing SDS: EHS Department**Contact:** <http://www.daikin.com/>**Abbreviations and acronyms:***ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)**IMDG: International Maritime Code for Dangerous Goods**IATA: International Air Transport Association**GHS: Globally Harmonised System of Classification and Labelling of Chemicals**EINECS: European Inventory of Existing Commercial Chemical Substances**DNEL: Derived No-Effect Level (REACH)**LC50: Lethal concentration, 50 percent**LD50: Lethal dose, 50 percent**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**Skin Corr. 1A: Skin corrosion/irritation – Category 1A**Eye Dam. 1: Serious eye damage/eye irritation – Category 1**** Data compared to the previous version altered.**