SAFETY DATA SHEET

Halocarbon 152A (1,1-Difluoroethane)



Section 1. Identification

GHS product identifier

: Halocarbon 152A (1,1-Difluoroethane)

Chemical name

: 1,1-difluoroethane

Other means of identification

Ethane, 1,1-difluoro-; Ethane, 1,1-difluoro- (Refrigerant gas R152A); HCFC-152a; HFC-

152a; R152a; DIFLUOROETHANE; Difluoroethane, 1,1-; HFC-152a;

1,1-difluoroethane; HYDROFLUOROCARBON 152A; Difluoroethane (R152a); Freon-

152; Ethylidene difluoride

Product type

: Liquefied gas.

Product use

: Synthetic/Analytical chemistry.

Synonym

Ethane, 1,1-difluoro-; Ethane, 1,1-difluoro- (Refrigerant gas R152A); HCFC-152a; HFC-152a; R152a; DIFLUOROETHANE; Difluoroethane, 1,1-; HFC-152a; 1,1-difluoroethane; HYDROFLUOROCARBON 152A; Difluoroethane (R152a);

Freon-152; Ethylidene difluoride

SDS#

001090

Supplier's details

: Airgas USA, LLC and its affiliates 259 North Radnor-Chester Road

Suite 100

Radnor, PA 19087-5283

1-610-687-5253

24-hour telephone

: 1-866-734-3438

Section 2. Hazards identification

OSHA/HCS status

: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture

: FLAMMABLE GASES - Category 1

GASES UNDER PRESSURE - Liquefied gas

HAZARDOUS TO THE OZONE LAYER - Category 1

GHS label elements

Hazard pictograms







Signal word

: Danger

Hazard statements

: Extremely flammable gas.

Contains gas under pressure; may explode if heated.

Harms public health and the environment by destroying ozone in the upper atmosphere.

May cause frostbite.

May displace oxygen and cause rapid suffocation.

May form explosive mixtures with air.

Precautionary statements

General

: Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction. Always keep container in upright position. Approach suspected leak area with caution.

Prevention

: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No

smoking.

Response

: Leaking gas fire: Do not extinguish, unless leak can be stopped safely. In case of leakage, eliminate all ignition sources.

Storage

: Protect from sunlight. Store in a well-ventilated place.

Date of issue/Date of revision : 3/17/2022 Date of previous issue : No previous validation Version : 0.01 1/12

Section 2. Hazards identification

Disposal

: Refer to manufacturer or supplier for information on recovery or recycling.

Hazards not otherwise

classified

: Liquid can cause burns similar to frostbite.

Section 3. Composition/information on ingredients

Substance/mixture

: Substance

Chemical name

: 1.1-difluoroethane

Other means of identification

: Ethane, 1,1-difluoro-; Ethane, 1,1-difluoro- (Refrigerant gas R152A); HCFC-152a; HFC-152a; R152a; DIFLUOROETHANE; Difluoroethane, 1,1-; HFC-152a;

1,1-difluoroethane; HYDROFLUOROCARBON 152A; Difluoroethane (R152a); Freon-

152; Ethylidene difluoride

Product code : 001090

CAS number/other identifiers

CAS number : 75-37-6

Ingredient name	%	CAS number
1,1 - difluoroethane	100	75-37-6

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact

: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation

: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact

: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Get medical attention if symptoms occur. In case of contact with liquid, warm frozen tissues slowly with lukewarm water and get medical attention. Do not rub affected area. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion

: Get medical attention if adverse health effects persist or are severe. Ingestion of liquid can cause burns similar to frostbite. If frostbite occurs, get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. As this product rapidly becomes a gas when released, refer to the inhalation section.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contactInhalationLiquid can cause burns similar to frostbite.No known significant effects or critical hazards.

Date of issue/Date of revision : 3/17/2022 Date of previous issue : No previous validation Version : 0.01 2/12

Section 4. First aid measures

Skin contact: Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or

frostbite.

Frostbite : Try to warm up the frozen tissues and seek medical attention.

Ingestion : Ingestion of liquid can cause burns similar to frostbite.

Over-exposure signs/symptoms

Eye contact: Adverse symptoms may include the following:, frostbite

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:, frostbite **Ingestion** : Adverse symptoms may include the following:, frostbite

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

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed.

The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments: No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may

be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Unsuitable extinguishing

media

: Use an extinguishing agent suitable for the surrounding fire.

: None known.

Specific hazards arising from the chemical

: Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Gas may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back, causing fire or explosion.

Hazardous thermal decomposition products

: Decomposition products may include the following materials:

carbon dioxide carbon monoxide halogenated compounds

naiogenated compounds

carbonyl halides

Special protective actions for fire-fighters

: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Eliminate all ignition sources if safe to do so.

Special protective equipment for fire-fighters

: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. For incidents involving large quantities, thermally insulated undergarments and thick textile or leather gloves should be worn.

Date of issue/Date of revision : 3/17/2022 Date of previous issue : No previous validation Version : 0.01 3/12

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

: Accidental releases pose a serious fire or explosion hazard. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders:

If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions

: Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up

Small spill

: Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.

Large spill

: Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Do not get in eyes or on skin or clothing. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

Use only non-sparking tools. Avoid release to the environment. Refer to special instructions/safety data sheet. Empty containers retain product residue and can be hazardous. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment.

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F). Keep container tightly closed and sealed until ready for use. See Section 10 for incompatible materials before handling or use.

Date of issue/Date of revision : 3/17/2022 Date of previous issue : No previous validation Version : 0.01 4/12

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
1,1 - difluoroethane	OARS WEEL (United States, 1/2021). TWA: 1000 ppm 8 hours. ACGIH TLV (United States, 1/2021). TWA: 2.5 mg/m³, (as F) 8 hours. OSHA PEL 1989 (United States, 3/1989). TWA: 2.5 mg/m³, (as F) 8 hours. OSHA PEL Z2 (United States, 2/2013). TWA: 2.5 mg/m³ 8 hours. Form: Dust OSHA PEL (United States, 5/2018). TWA: 2.5 mg/m³, (as F) 8 hours.

Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.

Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with sideshields.

Skin protection

Hand protection

: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. If contact with the liquid is possible, insulated gloves suitable for low temperatures should be worn. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection

: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear antistatic protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection

: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

: Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Date of issue/Date of revision : 3/17/2022 Date of previous issue : No previous validation Version : 0.01 5/12

Section 8. Exposure controls/personal protection

Thermal hazards

: If there is a risk of contact with the liquid, all protective equipment worn should be suitable for use with extremely low temperature materials.

Section 9. Physical and chemical properties

Appearance

Physical state : Gas. [Liquefied gas.]

Color : Colorless.
Odor : Mild.

Odor threshold : Not available.

pH : Not applicable.

Melting point : -117°C (-178.6°F)

Boiling point : -24.7°C (-12.5°F)

Critical temperature : 113.45°C (236.2°F)

Flash point : [Product does not sustain combustion.]

: Not available. **Evaporation rate** Flammability (solid, gas) : Not available. Lower and upper explosive : Lower: 3.7% Upper: 18% (flammable) limits Vapor pressure : 63 (psig) Vapor density 2.4 (Air = 1)Specific Volume (ft 3/lb) : 5.8514 Gas Density (lb/ft 3) : 0.1709

Relative density : Not applicable.

Solubility : Not available.

Solubility in water : 3.2 g/l

Partition coefficient: n-

octanol/water

: 1.13

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Flow time (ISO 2431) : Not available.

Molecular weight : 66.06 g/mole

Aerosol product

Heat of combustion : -18491700 J/kg

Section 10. Stability and reactivity

Reactivity: No specific test data related to reactivity available for this product or its ingredients.

Chemical stability: The product is stable.

Possibility of hazardous reactions

: Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not

allow gas to accumulate in low or confined areas.

Incompatible materials : Oxidizers

Hazardous decomposition products

: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Date of issue/Date of revision : 3/17/2022 Date of previous issue : No previous validation Version : 0.01 6/12

Section 10. Stability and reactivity

Hazardous polymerization: Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Not available.

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely

routes of exposure

: Not available.

Potential acute health effects

Eye contact : Liquid can cause burns similar to frostbite.

Inhalation : No known significant effects or critical hazards.

Skin contact: Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or

frostbite.

IngestionIngestion of liquid can cause burns similar to frostbite.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact: Adverse symptoms may include the following:, frostbite

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:, frostbite Ingestion : Adverse symptoms may include the following:, frostbite

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate

: Not available.

effects

Date of issue/Date of revision : 3/17/2022 Date of previous issue : No previous validation Version : 0.01 7/12

Section 11. Toxicological information

Potential delayed effects : Not available.

Long term exposure

Potential immediate

effects

: Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General
 Carcinogenicity
 No known significant effects or critical hazards.
 Mutagenicity
 No known significant effects or critical hazards.
 Teratogenicity
 No known significant effects or critical hazards.
 Developmental effects
 No known significant effects or critical hazards.
 Fertility effects
 No known significant effects or critical hazards.
 No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
1,1 - difluoroethane	1.13	-	low

Mobility in soil

Soil/water partition coefficient (Koc)

: Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods

: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty pressure vessels should be returned to the supplier. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Date of issue/Date of revision : 3/17/2022 Date of previous issue : No previous validation Version : 0.01 8/12

Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN1030	UN1030	UN1030	UN1030	UN1030
UN proper shipping name	1,1-DIFLUOROETHANE OR REFRIGERANT GAS R 152A	1,1-DIFLUOROETHANE; OR REFRIGERANT GAS R 152A	1,1-DIFLUOROETHANE OR REFRIGERANT GAS R 152A	1,1-DIFLUOROETHANE (REFRIGERANT GAS R 152A)	1,1-DIFLUOROETHANE
Transport hazard class(es)	2.1	2.1	2.1	2.1	2.1
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.

[&]quot;Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

Additional information

DOT Classification : Limited quantity Yes.

Quantity limitation Passenger aircraft/rail: Forbidden. Cargo aircraft: 150 kg.

Special provisions T50

TDG Classification : Product classified as per the following sections of the Transportation of Dangerous

Goods Regulations: 2.13-2.17 (Class 2).

Explosive Limit and Limited Quantity Index 0.125

ERAP Index 3000

Passenger Carrying Road or Rail Index Forbidden

Quantity limitation Passenger and Cargo Aircraft: Forbidden. Cargo Aircraft Only: 150 **IATA**

kg.

Special precautions for user : Transport within user's premises: always transport in closed containers that are

upright and secure. Ensure that persons transporting the product know what to do in the

event of an accident or spillage.

Transport in bulk according : Not available.

to IMO instruments

Section 15. Regulatory information

U.S. Federal regulations : TSCA 8(a) CDR Exempt/Partial exemption: Not determined

Clean Air Act (CAA) 112 regulated flammable substances: 1,1-difluoroethane

Clean Air Act Section 112

(b) Hazardous Air **Pollutants (HAPs)** : Not listed

Clean Air Act Section 602

Class I Substances

: Not listed

Clean Air Act Section 602

Class II Substances

: Not listed

DEA List I Chemicals

: Not listed

(Precursor Chemicals)

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Date of issue/Date of revision 9/12 : 3/17/2022 Version: 0.01 Date of previous issue : No previous validation

Section 15. Regulatory information

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification: Refer to Section 2: Hazards Identification of this SDS for classification of substance.

State regulations

Massachusetts: This material is listed.New York: This material is not listed.New Jersey: This material is listed.Pennsylvania: This material is not listed.

California Prop. 65

This product does not require a Safe Harbor warning under California Prop. 65.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Ingredient name	Status
HFC-152a	Annex F, Group I

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia : This material is listed or exempted.

Canada : This material is listed or exempted.

China : This material is listed or exempted.

Europe : This material is listed or exempted.

Japan : Japan inventory (CSCL): This material is listed or exempted.

Japan inventory (ISHL): Not determined.

New Zealand : This material is listed or exempted. **Philippines** : This material is listed or exempted. Republic of Korea : This material is listed or exempted. **Taiwan** : This material is listed or exempted. **Thailand** : This material is listed or exempted. **Turkey** : This material is listed or exempted. **United States** : This material is active or exempted. **Viet Nam** : This material is listed or exempted.

Date of issue/Date of revision : 3/17/2022 Date of previous issue : No previous validation Version : 0.01 10/12

Section 16. Other information

Hazardous Material Information System (U.S.A.)



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
FLAMMABLE GASES - Category 1	Expert judgment
GASES UNDER PRESSURE - Liquefied gas	Expert judgment
HAZARDOUS TO THE OZONE LAYER - Category 1	On basis of test data

History

Date of printing : 3/17/2022 Date of issue/Date of : 3/17/2022

revision

Date of previous issue : No previous validation

Version : 0.01

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMDG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973

as modified by the Protocol of 1978. ("Marpol" = marine pollution)

UN = United Nations

References
Notice to reader

: Not available.

Date of issue/Date of revision : 3/17/2022 Date of previous issue : No previous validation Version : 0.01 11/12

Section 16. Other information

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Date of issue/Date of revision : 3/17/2022 Date of previous issue : No previous validation Version : 0.01 12/12