

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

1.1 Product identifier

Trade name: DAIFREE GA-9700M

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

Sector of Use SU8 Manufacture of bulk, large scale chemicals (including petroleum products)

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

DAIKIN INDUSTRIES, LTD. CHEMICALS DIVISION:

Umeda Center Bldg., 4-12, Nakazaki-Nishi 2-chome, Kita-Ku, Osaka, JAPAN

Phone: (+81) 6-6373-4345 Fax: (+81) 6-6373-4281

Further information obtainable from: <http://www.daikin.com/>

1.4 Emergency telephone number:

Japan: +81-6-6349-7521

China: +86-512-5-232-0949, +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



Aerosol 1 H222-H229 Extremely flammable aerosol. Pressurised container: May burst if heated.



Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



Aquatic Acute 1 H400 Very toxic to aquatic life.

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.



Skin Irrit. 2 H315 Causes skin irritation.

STOT SE 3 H336 May cause drowsiness or dizziness.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008:

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

Signal word: Danger

Hazard-determining components of labelling:

Isooctane

Octane

Precautionary statements:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P251 Do not pierce or burn, even after use.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P405 Store locked up.

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

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

	Fluoropolymer	< 5%
	Silicon compound	< 5%
CAS: 111-65-9	Octane Flam. Liq. 2, H225 Asp. Tox. 1, H304 Aquatic Acute 1, H400; Aquatic Chronic 1, H410 Skin Irrit. 2, H315; STOT SE 3, H336	< 5%
CAS: 26635-64-3	Isooctane Flam. Liq. 2, H225 Asp. Tox. 1, H304 Aquatic Acute 1, H400; Aquatic Chronic 1, H410 Skin Irrit. 2, H315; STOT SE 3, H336	45-55%
CAS: 106-97-8	butane Flam. Gas 1A, H220 Press. Gas (Comp.), H280	25-35%
CAS: 75-28-5	Isobutane (containing < 0,1 % butadiene (203-450-8)) Flam. Gas 1A, H220 Press. Gas (Comp.), H280	< 5%
CAS: 108-88-3	Toluene Flam. Liq. 2, H225 Repr. 2, H361d; STOT RE 2, H373; Asp. Tox. 1, H304 Skin Irrit. 2, H315; STOT SE 3, H336	< 5%
	Others	5-15%

Additional information: For the wording of the listed hazard phrases refer to section 16.**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:

Do not induce vomiting; Consult a doctor immediately.

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:**

Alcohol resistant foam

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Trade name: DAIFREE GA-9700M*Fire-extinguishing powder**Dry sand**CO₂***For safety reasons unsuitable extinguishing agents:** *Water with full jet***5.2 Special hazards arising from the substance or mixture:***Formation of toxic gases is possible during heating or in case of fire.**Receptacle may explode when heated.**Extremely flammable; can ignite easily with heat, sparks, fire.***5.3 Advice for firefighters:** *Remove receptacles from area of fire if possible.***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:***Do not allow to enter sewers/surface or ground water.**Prevent seepage into sewage system, workpits and cellars.***6.3 Methods and material for containment and cleaning up:***In case of spill a small amount of product, and recovering what was wiped off, use an antistatic tool.**Do not flush with water or aqueous cleansing agents**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 small amount of leakage: Use clean anti-static tools when absorbing the product.**For a large amount of leakage: Enclose with banks to avoid outflow. Lead the leakage to a safe place and collect.**Remove ignition sources immediately.**Ground all equipment when the product leaks.**There is a danger of explosion. Prepare fire extinguisher in case of emergency.***6.4 Reference to other sections:***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:***Open and handle receptacle with care.**Ensure good ventilation/exhaustion at the workplace.**Handle with care. Avoid jolting, friction and impact.**Do not handle until all safety precautions have been read and understood.***Information about fire - and explosion protection:***Do not spray onto a naked flame or any incandescent material.**Keep ignition sources away - Do not smoke.**Protect against electrostatic charges.**Pressurised container: protect from sunlight and do not expose to temperatures exceeding 40 °C, i.e. electric lights.**Do not pierce or burn, even after use.**Use flame proof electric/lighting devices and ventilation equipment.**Ground/bond container and receiving equipment.***7.2 Conditions for safe storage, including any incompatibilities:****Storage****Requirements to be met by storerooms and receptacles:***Store in a cool and dry location.*

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Observe official regulations on storing packagings with pressurised containers.
Keep containers tightly sealed.

Information about storage in one common storage facility:

Store away from oxidising agents.

See section 10 for information on incompatible materials.

Further information about storage conditions:

Store in a cool place. Heat will increase pressure and may lead to the receptacle bursting.

Do not seal receptacle gas tight.

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:**CAS: 108-88-3 Toluene**

IOELV (EU) Short-term value: 384 mg/m³, 100 ppm

Long-term value: 192 mg/m³, 50 ppm

Skin

Additional information: The lists valid during the making were used as basis.

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:**

Keep away from foodstuffs, beverages and feed.

Store protective clothing separately.

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

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation



Protective gloves

Material of gloves:

Synthetic rubber 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

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Body protection: Protective work clothing

*** SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties****General Information**

Physical state	Aerosol
Colour:	Transparent
Odour:	Characteristic
Odour threshold:	Not determined.
Melting point/freezing point:	No further information available.
Boiling point or initial boiling point and boiling range	No further information available.
Flammability	Not applicable.
Lower and upper explosion limit	
Lower explosive limit:	No further information available.
Upper explosive limit:	No further information available.
Flash point:	7 °C (SCC)
Decomposition temperature:	No further information available.
pH	No further information available.
Viscosity:	
Kinematic viscosity	Not determined.
Dynamic:	Not determined.
Solubility	
water:	No further information available.
Partition coefficient n-octanol/water (log value)	No further information available.
Vapour pressure:	No further information available.
Density and/or relative density	
Density:	No further information available.
Relative density	Not determined.
Vapour density	Not determined.
Particle characteristics	No further relevant information available.

9.2 Other information:

Appearance	
Form:	Liquid
Auto-ignition temperature:	Product is not self-igniting.
Explosive properties:	Not determined.
Evaporation rate	Not applicable.

Information with regard to physical hazard classes

Explosives	Not applicable
Flammable gases	Not applicable
Aerosols	
Extremely flammable aerosol. Pressurised container: May burst if heated.	

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

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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:** Oxidizing agents**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** no data**LD/LC50 values relevant for classification:** No further information available.**Skin corrosion/irritation**

Causes skin irritation.

Serious eye damage/irritation No further information available.**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** No further information available.**STOT-repeated exposure** No further information available.**Aspiration hazard**

May be fatal if swallowed and enters airways.

Other information (about experimental toxicology): No further information available.**Subacute to chronic toxicity** No further information available.**11.2 Information on other hazards****Endocrine disrupting properties**

None of the ingredients is listed.

*** SECTION 12: Ecological information****12.1 Toxicity****Aquatic toxicity:** No further relevant information available.**12.2 Persistence and degradability:** No further relevant information available.**12.3 Bioaccumulative potential:** No further relevant information available.**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** For information on endocrine disrupting properties see section 11.**Ecotoxicological effects:** no data**Remark:** Very toxic for fish**Additional ecological information:****General notes:**

Danger to drinking water if even extremely small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Very toxic for aquatic organisms

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

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Disposal must be made according to official regulations.

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Uncleaned packaging

Recommendation: Disposal must be made according to official regulations.

* **SECTION 14: Transport information**

14.1 UN number or ID number

ADR, IMDG, IATA UN1950

14.2 UN proper shipping name:

ADR: AEROSOLS, ENVIRONMENTALLY HAZARDOUS
IMDG: AEROSOLS (Isooctane, OCTANES), MARINE POLLUTANT
IATA: AEROSOLS, flammable

14.3 Transport hazard class(es):

ADR



Class: 2 5F Gases.

Label: 2.1

IMDG



Class: 2.1 Gases.

Label: 2.1

IATA



Class: 2.1 Gases.

Label: 2.1

14.4 Packing group:

ADR, IMDG, IATA Not applicable

14.5 Environmental hazards:

Product contains environmentally hazardous substances:

Marine pollutant: Isooctane
Yes (P)
Symbol (fish and tree)

Special marking (ADR): Symbol (fish and tree)

14.6 Special precautions for user: Warning: Gases.

Hazard identification number (Kemler code): -

EMS Number: F-D,S-U

Stowage Code SW1 Protected from sources of heat.

Segregation Code SW2 Clear of living quarters.

SG69 For AEROSOLS with a maximum capacity of 1 litre:
Segregation as for class 9. Stow "separated from" class 1 except for division 1.4.

For AEROSOLS with a capacity above 1 litre:
Segregation as for the appropriate subdivision of class 2.

For WASTE AEROSOLS:
Segregation as for the appropriate subdivision of class 2.

14.7 Maritime transport in bulk according to IMO instruments Not applicable.

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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):**

1L

Excepted quantities (EQ)

Code: E0

Not permitted as Excepted Quantity

Transport category:

2

Tunnel restriction code:

D

IMDG**Limited quantities (LQ)**

1L

Excepted quantities (EQ)

Code: E0

Not permitted as Excepted Quantity

UN "Model Regulation":

UN 1950 AEROSOLS, 2.1, ENVIRONMENTALLY HAZARDOUS

*** 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 product is classified and labelled according to the CLP regulation.

Hazard pictograms

GHS02

GHS07

GHS08

GHS09

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

Isooctane

Octane

Hazard statements

H222-H229 Extremely flammable aerosol. Pressurised container: May burst if heated.

H315 Causes skin irritation.

H336 May cause drowsiness or dizziness.

H304 May be fatal if swallowed and enters airways.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P251 Do not pierce or burn, even after use.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P405 Store locked up.

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

Seveso category

E1 Hazardous to the Aquatic Environment

P3a FLAMMABLE AEROSOLS

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

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Trade name: DAIFREE GA-9700M**Contact:** <http://www.daikin.com/>**Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

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

P: Marine Pollutant

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Gas 1A: Flammable gases – Category 1A

Aerosol 1: Aerosols – Category 1

Press. Gas (Comp.): Gases under pressure – Compressed gas

Flam. Liq. 2: Flammable liquids – Category 2

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Repr. 2: Reproductive toxicity – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

Asp. Tox. 1: Aspiration hazard – Category 1

Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

*** Data compared to the previous version altered.**