

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

**1.1 Product identifier**

**Trade name: DAIFREE GA-3000**

**Article number: GFA3000**

**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**



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.



Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

STOT SE 3 H336 May cause drowsiness or dizziness.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

**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:**

3-Methylpentane

Isopropyl alcohol

2-Methylpentane

n-Hexane

**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.

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

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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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:**

Fluorocompound	< 5%
CAS: 67-63-0 Isopropyl alcohol Flam. Liq. 2, H225 Eye Irrit. 2, H319; STOT SE 3, H336	20-30%
CAS: 107-83-5 2-Methylpentane Flam. Liq. 2, H225 Asp. Tox. 1, H304 Aquatic Chronic 2, H411 Skin Irrit. 2, H315; STOT SE 3, H336	5-15%
CAS: 96-14-0 3-Methylpentane Flam. Liq. 2, H225 Asp. Tox. 1, H304 Aquatic Chronic 2, H411 Skin Irrit. 2, H315; STOT SE 3, H336	5-15%
CAS: 110-54-3 n-Hexane Flam. Liq. 2, H225 Repr. 2, H361f; STOT RE 2, H373; Asp. Tox. 1, H304 Aquatic Chronic 2, H411 Skin Irrit. 2, H315; STOT SE 3, H336 Specific concentration limit: STOT RE 2; H373: C ≥ 5 %	< 5%
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	5-15%
CAS: 74-98-6 Propane Flam. Gas 1A, H220 Press. Gas (Comp.), H280	5-15%
Others	<5%

**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:**

Immediately wash with water and soap and rinse thoroughly.

Consult a doctor in case of complaints.

**After eye contact:**

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

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:** Consult a doctor in case of complaints.**4.2 Most important symptoms and effects, both acute and chronic:** No further relevant information available.

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**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:**

CO<sub>2</sub>, sand, extinguishing powder. Do not use water.

Alcohol resistant foam

Fire-extinguishing powder

Dry sand

CO<sub>2</sub>

#### **For safety reasons unsuitable extinguishing agents:**

Water

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:**

Keep away from ignition sources.

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:**

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:**

Prevent formation of aerosols.

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.

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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.

Observe official regulations on storing packagings with pressurised containers.

Keep containers tightly sealed.

**Information about storage in one common storage facility:**

Not required.

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.

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: 110-54-3 n-Hexane**

IOELV (EU) Long-term value: 72 mg/m<sup>3</sup>, 20 ppm

**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.

Avoid contact with the eyes.

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:**

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.

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**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**

<b>Physical state</b>	Aerosol
<b>Colour:</b>	Light yellow
<b>Odour:</b>	Alcohol-like
<b>Odour threshold:</b>	Not determined.
<b>Melting point/freezing point:</b>	Undetermined.
<b>Boiling point or initial boiling point and boiling range</b>	Undetermined.
<b>Flammability</b>	Not applicable.
<b>Lower and upper explosion limit</b>	
<b>Lower explosive limit:</b>	1.2 Vol %
<b>Upper explosive limit:</b>	12.0 Vol %
<b>Flash point:</b>	-20 °C (TCC)
<b>Ignition temperature:</b>	Not determined.
<b>Decomposition temperature:</b>	No further information available.
<b>pH</b>	Not determined.
<b>Viscosity:</b>	
<b>Kinematic viscosity</b>	Not determined.
<b>Dynamic:</b>	Not determined.
<b>Solubility</b>	
<b>water:</b>	No further information available.
<b>Partition coefficient n-octanol/water (log value)</b>	No further information available.
<b>Vapour pressure at 20 °C:</b>	230 hPa
	No further information available.
<b>Density and/or relative density</b>	
<b>Density:</b>	Not determined.
<b>Relative density</b>	Not determined.
<b>Vapour density</b>	Not determined.
<b>Particle characteristics</b>	No further information available.

**9.2 Other information:**

<b>Form:</b>	Aerosol
<b>Auto-ignition temperature:</b>	Product is not self-igniting.
<b>Explosive properties:</b>	Not determined.
<b>Evaporation rate</b>	Not applicable.

**Information with regard to physical hazard classes**

<b>Explosives</b>	Not applicable
<b>Flammable gases</b>	Not applicable
<b>Aerosols</b>	
<b>Extremely flammable aerosol. Pressurised container: May burst if heated.</b>	
<b>Oxidising gases</b>	Not applicable
<b>Gases under pressure</b>	Not applicable
<b>Flammable liquids</b>	Not applicable
<b>Flammable solids</b>	Not applicable
<b>Self-reactive substances and mixtures</b>	Not applicable
<b>Pyrophoric liquids</b>	Not applicable
<b>Pyrophoric solids</b>	Not applicable
<b>Self-heating substances and mixtures</b>	Not applicable

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<b>Substances and mixtures, which emit flammable gases in contact with water</b>	Not applicable
<b>Oxidising liquids</b>	Not applicable
<b>Oxidising solids</b>	Not applicable
<b>Organic peroxides</b>	Not applicable
<b>Corrosive to metals</b>	Not applicable
<b>Desensitised explosives</b>	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:**

Fluorophosgene in contact with naked flame or red hot objects.

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 further information available.

**LD/LC50 values relevant for classification:** No further information available.

**Skin corrosion/irritation:**

Causes skin irritation.

**Serious eye damage/irritation:**

Causes serious eye irritation.

**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:**

May cause drowsiness or dizziness.

**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.

**12.7 Other adverse effects:**

**Ecotoxicological effects:** no data

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**Additional ecological information:****General notes:**

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

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

Harmful to 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.

Must be specially treated adhering to official regulations.

Disposal must be made according to official regulations.

**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:

1950 AEROSOLS

IMDG:

AEROSOLS

IATA:

AEROSOLS, flammable

**14.3 Transport hazard class(es):**

ADR



Class:

2 5F Gases.

Label:

2.1

IMDG, IATA



Class:

2.1 Gases.

Label:

2.1

**14.4 Packing group:**

ADR, IMDG, IATA

Not applicable

**14.5 Environmental hazards:**

Marine pollutant:

No

**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.

SW22 For AEROSOLS with a maximum capacity of 1 litre:

Category A. For AEROSOLS with a capacity above 1 litre:

Category B. For WASTE AEROSOLS: Category C, Clear of

living quarters.

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**Segregation Code**

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****Transport/Additional information:**

Not applicable.

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

**UN "Model Regulation":**

UN1950, AEROSOLS, 2.1

**\* 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

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

3-Methylpentane

Isopropyl alcohol

2-Methylpentane

n-Hexane

**Hazard statements**

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

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

H304 May be fatal if swallowed and enters airways.

H412 Harmful 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.

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

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P405 Store locked up.

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



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**Trade name: DAIFREE GA-3000****National regulations****Information about limitation of use:**

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.

**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:**

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

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

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

Muta. 1B: Germ cell mutagenicity – Category 1B

Carc. 1A: Carcinogenicity – Category 1A

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 Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

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