

* **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:

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.



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

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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*** 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	< 5%
CAS: 106-97-8 butane Flam. Gas 1, H220 Press. Gas (Comp.), H280	25-35%
CAS: 75-28-5 Isobutane (containing < 0,1 % butadiene (203-450-8)) Flam. Gas 1, H220 Press. Gas (Comp.), H280	5-15%
CAS: 74-98-6 Propane Flam. Gas 1, 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.**4.3 Indication of any immediate medical attention and special treatment needed:**

No further relevant information available.

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SECTION 5: Firefighting measures**5.1 Extinguishing media****Suitable extinguishing agents:***CO₂, sand, extinguishing powder. Do not use water.**Alcohol resistant foam**Fire-extinguishing powder**Dry sand**CO₂***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.**Keep ignition sources away - Do not smoke.*

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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

Additional information about design of technical facilities: No further data; see item 7.

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/m³, 20 ppm

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

8.2 Exposure controls

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.

Protection of hands:



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 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****Appearance**

Form:	Aerosol
Colour:	Light yellow
Odour:	Alcohol-like
Odour threshold:	Not determined.
pH-value:	No further information available.
Melting point/freezing point:	No further information available.
Initial boiling point and boiling range:	No further information available.
Flash point:	-20 °C (TCC)
Flammability (solid, gas):	Not applicable.
Ignition temperature:	Not determined.
Decomposition temperature:	No further information available.
Auto-ignition temperature:	Product is not selfigniting.
Explosive properties:	Not determined.
Explosion limits:	
Lower explosive limit:	1.2 Vol %
Upper explosive limit:	12.0 Vol %
Vapour pressure at 20 °C:	230 hPa No further information available.
Density:	No further information available.
Relative density	Not determined.
Vapour density	Not determined.
Evaporation rate	Not applicable.
Solubility in / Miscibility with water:	No further information available.
Partition coefficient: n-octanol/water:	No further information available.
Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
9.2 Other information:	No further relevant information available.

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.

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*** SECTION 11: Toxicological information****11.1 Information on toxicological effects****Acute toxicity** No further information available.**LD/LC50 values relevant for classification:** No further information available.**Primary irritant effect****Skin corrosion/irritation**

Causes skin irritation.

Serious eye damage/irritation

Causes serious eye irritation.

Respiratory or skin sensitisation No further information available.**Other information (about experimental toxicology):** No further information available.**Subacute to chronic toxicity** No further information available.**CMR effects****Germ cell mutagenicity**

Not applicable

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.

*** 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.**Ecotoxicological effects:** no data**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

12.5 Results of PBT and vPvB assessment**PBT:**

No further relevant information available.

Not applicable.

vPvB:

No further relevant information available.

Not applicable.

12.6 Other adverse effects: No further relevant information available.**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:**

ADR, IMDG, IATA

UN1950

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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
Label: 2.1

14.4 Packing group:

ADR, IMDG, IATA Not applicable

14.5 Environmental hazards:

Marine pollutant: Yes

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.

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 Transport in bulk according to Annex II of

MARPOL73/78 and the IBC Code:

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.

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Trade name: DAIFREE GA-3000**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.*

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 européen sur le transport 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 1: *Flammable gases – Category 1*
Aerosol 1: *Aerosols – Category 1*

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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.**