

Printing date 23.10.2023

Version number 1

Revision: 23.10.2023

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier****Trade name: DAI-EL G-311****Article number: G311****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**

The product is not classified, according to the CLP regulation.

2.2 Label elements**Labelling according to Regulation (EC) No 1272/2008:** Not applicable**Signal word:** Not applicable*** SECTION 3: Composition/information on ingredients****Information on ingredients:**CAS: 9011-17-0 Vinylidene fluoride-hexafluoropropylene copolymer ≥90%CAS: 1478-61-1 Bisphenol AF <5%Vulcanization accelerator <5%

Acute Tox. 2, H300; Acute Tox. 2, H330

STOT RE 1, H372

Eye Dam. 1, H318

Aquatic Acute 1, H400; Aquatic Chronic 1, H410

STOT SE 3, H335

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:** In case of inhaling decomposed gases: supply fresh air and consult a doctor in case of complaints.**After skin contact:**

Immediately wash with water and soap and rinse thoroughly.

After contact with the molten product, cool rapidly with cold water.

Do not pull solidified product off the skin.

Consult a doctor in case of complaints.

After eye contact:

Rinse opened eye for several minutes under running water.

Consult an ophthalmologist in case of complaints.

After swallowing: If symptoms persist consult a doctor.**4.2 Most important symptoms and effects, both acute and chronic:** No further relevant information available.

Printing date 23.10.2023

Version number 1

Revision: 23.10.2023

Trade name: DAI-EL G-311

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.

For safety reasons unsuitable extinguishing agents: No further information available.

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 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.

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 product to reach sewage system or any water course.

6.3 Methods and material for containment and cleaning up: Pick up mechanically.

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:

Ensure good ventilation/exhaustion at the workplace.

Extractors are required on all machines used for thermal processing or powder handling processes.

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.

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.

Information about storage in one common storage facility:

See section 10 for information on incompatible materials.

Further information about storage conditions:

Protect from heat and direct sunlight.

Store containers in a well ventilated area.

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:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

8.2 Exposure controls

Appropriate engineering controls No further data; see section 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.

Printing date 23.10.2023

Version number 1

Revision: 23.10.2023

Trade name: DAI-EL G-311

Respiratory protection:

Use respiratory protective device with filters for organic and acid gas (or airline respirators in some cases), if the product is heated above 200 °C and toxic gas is formed.

Dust respirator, simplified dust respirator

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	Solid
Colour:	White
Odour:	Odourless
Melting point/freezing point:	Undetermined.
Boiling point or initial boiling point and boiling range	Undetermined.
Flammability	Product is not flammable.
Lower and upper explosion limit	
Lower explosive limit:	No further information available.
Upper explosive limit:	Not determined.
Flash point:	Not applicable.
Auto-ignition temperature:	Product is not self-igniting.
Decomposition temperature:	No further information available.
pH	Not determined.
Viscosity:	
Kinematic viscosity	No further information available.
Solubility	
water:	Insoluble.
Partition coefficient n-octanol/water (log value)	No further information available.
Vapour pressure:	Not applicable.
Density and/or relative density	
Density:	Not determined.
Vapour density	No further information available.
Particle characteristics	No further information available.

9.2 Other information:

Form:	Solid Sheet
Ignition temperature:	Product is not self-igniting.

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

Printing date 23.10.2023

Version number 1

Revision: 23.10.2023

Trade name: DAI-EL G-311

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:

Metal powder (e.g. Al, Mg) and fluorine oxidizer. There is a danger of chemical reactions that could cause fire or explosion when the product is heated with them.

10.6 Hazardous decomposition products:

As for decomposition products, particulate matters and extremely toxic/corrosive fumes may be generated (HF, carbonyl fluoride, monomers, perfluoroisobutylene).

Decomposition products differ depending on the temperature and conditions.

Organic iodine compounds such as methyl iodide may be generated when iodine which becomes a crosslinking point reacts with decomposed products of organic peroxide.

*** 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: No further information available.

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Serious eye damage/irritation: Based on available data, the classification criteria are not met.

after inhalation: No further information available.

Respiratory or skin sensitisation: Based on available data, the classification criteria are not met.

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

Carcinogenicity: Based on available data, the classification criteria are not met.

Reproductive toxicity: Based on available data, the classification criteria are not met.

STOT-single exposure: Based on available data, the classification criteria are not met.

STOT-repeated exposure: Based on available data, the classification criteria are not met.

Aspiration hazard: Based on available data, the classification criteria are not met.

Other information (about experimental toxicology): No further information available.

Subacute to chronic toxicity: No further information available.

Additional toxicological information:

General effects:

Fumes generated during burning may cause "polymer fume fever" (flu-like symptoms such as fever, chill, cough).

This may last for a whole day and night.

Fumes are not absorbed in skin. No sensitizing effect known.

Effects of hydrogen fluoride:

Low concentration of hydrogen fluoride may cause feeling of dyspnea, cough, irritation in eyes, nose, throat, fever, chill for 1-2 days.

After that, dyspnea, cyanosis and pulmonary edema may be seen.

High concentration of hydrogen fluoride damages liver and kidney.

Effects of carbonyl fluoride:

Printing date 23.10.2023

Version number 1

Revision: 23.10.2023

Trade name: DAI-EL G-311

*Skin: Irritation or eruption**Eye: Ulcer in cornea, conjunctiva**Respiratory system: Irritation**Lung: Temporary symptoms such as cough, pain, dyspnea**Persons who have experienced lung diseases are vulnerable to toxicity caused by excessive exposure to pyrolysis products***11.2 Information on other hazards:****Endocrine disrupting properties:***The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.**** SECTION 12: Ecological information****12.1 Toxicity***Aquatic toxicity: No further relevant information available.***12.2 Persistence and degradability:** *The product is thought to be non-biodegradable.***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 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***SECTION 13: Disposal considerations****13.1 Waste treatment methods****Recommendation:***Landfill disposal is recommended.**In case of incineration, the temperature must be higher than 800 °C.**Treat exhaust gas such as HF in a suitable way.**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, ADN, IMDG, IATA** *Not applicable***14.2 UN proper shipping name:****ADR, ADN, IMDG, IATA** *Not applicable***14.3 Transport hazard class(es):****ADR, ADN, IMDG, IATA****Class:** *Not applicable***14.4 Packing group:****ADR, IMDG, IATA** *Not applicable***14.5 Environmental hazards:****Marine pollutant:** *No***14.6 Special precautions for user:** *Not applicable.***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.***UN "Model Regulation":***Not applicable*

Printing date 23.10.2023

Version number 1

Revision: 23.10.2023

Trade name: DAI-EL G-311

*** 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** *Not applicable***Hazard pictograms** *Not applicable***Signal word** *Not applicable***Hazard statements** *Not applicable***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:***RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)**IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)**ICAO: International Civil Aviation Organisation**ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)**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**** Data compared to the previous version altered.**