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Version number 1

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier****Trade name:** C6 OLEFIN**Article number:** ST-N2OLF**EC number:**

246-791-8

**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



STOT RE 1 H372 Causes damage to organs through prolonged or repeated exposure.



Acute Tox. 4 H302 Harmful if swallowed.

**2.2 Label elements****Labelling according to Regulation (EC) No 1272/2008:**

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

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

3,3,4,4,5,5,6,6,7,7,8,8,8-Tridecafluorooct-1-ene

**Precautionary statements:**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

P330 Rinse mouth.

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

**\* SECTION 3: Composition/information on ingredients****Substance or mixture:** Substance**Information on ingredients:**CAS: 25291-17-2 3,3,4,4,5,5,6,6,7,7,8,8,8-Tridecafluorooct-1-ene ≥99.9%

STOT RE 1, H372

Acute Tox. 4, H302

Others

<0.1%

Printing date 24.03.2023

Version number 1

Revision: 24.03.2023

**Trade name: C6 OLEFIN****Identification number(s)****EC number: 246-791-8****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:**

Rinse mouth with water. Do not induce vomiting.

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:** Use fire extinguishing methods suitable for surrounding conditions.**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.

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:** Prevent seepage into sewage system, workpits and cellars.**6.3 Methods and material for containment and cleaning up:**

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 large amount of leakage: Enclose with banks to avoid outflow. Lead the leakage to a safe place and collect.

**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.

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.

Printing date 24.03.2023

Version number 1

Revision: 24.03.2023

Trade name: C6 OLEFIN

**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.

Keep containers tightly sealed.

**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.

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:** Not required.**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:**

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:** Rubber**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**

Fluid

**Colour:**

Colourless

**Odour:**

Characteristic

**Odour threshold:**

Not determined.

**Melting point/freezing point:**

&lt;-60 °C

**Boiling point or initial boiling point and boiling range**

106 °C

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.

**Decomposition temperature:**

No further information available.

Printing date 24.03.2023

Version number 1

Revision: 24.03.2023

Trade name: C6 OLEFIN

<b>pH</b>	4.5-8
<b>Viscosity:</b>	
<b>Kinematic viscosity</b>	No further information available.
<b>Solubility</b>	
<b>water:</b>	1.21 mg/l
<b>Partition coefficient n-octanol/water (log value)</b>	No further information available.
<b>Vapour pressure:</b>	No further information available.
<b>Density and/or relative density</b>	
<b>Density at 25 °C:</b>	1.56-1.58
<b>Relative density</b>	Not determined.
<b>Vapour density</b>	No further information available.
<b>Particle characteristics</b>	No further information available.
<b>9.2 Other information:</b>	
<b>Form:</b>	Liquid
<b>Auto-ignition temperature:</b>	Product is not self-igniting.
<b>Information with regard to physical hazard classes</b>	
<b>Explosives</b>	Not applicable
<b>Flammable gases</b>	Not applicable
<b>Aerosols</b>	Not applicable
<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
<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:** Nucleophilic reagent (alkali, alcohol)

**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**

Harmful if swallowed.

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

**Skin corrosion/irritation:** No further information available.

**Serious eye damage/irritation:** No further information available.

**after inhalation:** No further information available.

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

**Germ cell mutagenicity:**

Ames Assay - Negative

Chromosomal Aberration Study in vivo - Negative

Printing date 24.03.2023

Version number 1

Revision: 24.03.2023

**Trade name: C6 OLEFIN****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:**

Causes damage to organs through prolonged or repeated exposure.

**Aspiration hazard:** Based on available data, the classification criteria are not met.**Other information (about experimental toxicology):**

No further information available.

Chromosomal Aberration Study in vitro- Negative

**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:****CAS: 25291-17-2 3,3,4,4,5,5,6,6,7,7,8,8,8-Tridecafluorooct-1-ene**

EC50/48 h &gt;0.0719 mg/l (Daphnia)

EC50/72hr &gt;0.0139 mg/l (Alga)

LC50/96 h &gt;10 mg/l (Fish)

**12.2 Persistence and degradability:**

This product will persist in the environment. Handle with care in case of accidental release or disposal.

**12.3 Bioaccumulative potential:**

Does not accumulate in organisms

**CAS: 25291-17-2 3,3,4,4,5,5,6,6,7,7,8,8,8-Tridecafluorooct-1-ene**

BCF 300-380 (Fish)

**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.

Wear appropriate protective devices.

**Uncleaned packaging****Recommendation:**

Disposal must be made according to official regulations.

Empty contaminated packagings thoroughly.

**SECTION 14: Transport information****14.1 UN number or ID number****ADR, ADN, IMDG, IATA**

Not applicable

**14.2 UN proper shipping name:****ADR:**

Not applicable

Printing date 24.03.2023

Version number 1

Revision: 24.03.2023

Trade name: C6 OLEFIN

<b>ADN, IMDG, IATA</b>	Not applicable
<b>14.3 Transport hazard class(es):</b>	
<b>ADR, ADN, IMDG, IATA</b>	
<b>Class:</b>	Not applicable
<b>14.4 Packing group:</b>	
<b>ADR, IMDG, IATA</b>	Not applicable
<b>14.5 Environmental hazards:</b>	
<b>Marine pollutant:</b>	No
<b>14.6 Special precautions for user:</b>	Not applicable.
<b>14.7 Maritime transport in bulk according to IMO instruments</b>	Not applicable.
<b>Transport/Additional information:</b>	Avoid direct sunlight. Make sure of no damage, corrosion, leaks on the receptacles. Take necessary measures for preventing cargo shift.
<b>UN "Model Regulation":</b>	Not applicable

**\* 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 substance is classified and labelled according to the CLP regulation.

**Hazard pictograms**

GHS07 GHS08

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

3,3,4,4,5,5,6,6,7,7,8,8,8-Tridecafluorooct-1-ene

**Hazard statements**

H302 Harmful if swallowed.

H372 Causes damage to organs through prolonged or repeated exposure.

**Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

P330 Rinse mouth.

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

**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)

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)

Printing date 24.03.2023

Version number 1

Revision: 24.03.2023

**Trade name: C6 OLEFIN**

*IMDG: International Maritime Code for Dangerous Goods*

*IATA: International Air Transport Association*

*GHS: Globally Harmonised System of Classification and Labelling of Chemicals*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

*LC50: Lethal concentration, 50 percent*

*LD50: Lethal dose, 50 percent*

*PBT: Persistent, Bioaccumulative and Toxic*

*vPvB: very Persistent and very Bioaccumulative*

*Acute Tox. 4: Acute toxicity – Category 4*

*STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1*

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