

Printing date 27.12.2016

Version number 1

Revision: 27.12.2016

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier****Trade name: NEOFLON PFA TC-1559M2****Article number: TC1559M2****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: +1-256-306-5000

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**

Flam. Liq. 2 H225 Highly flammable liquid and vapour.



Repr. 1B H360D May damage the unborn child.



Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

STOT SE 3 H335 May cause respiratory irritation.

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.

P241 Use explosion-proof electrical/ventilating/lighting equipment.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

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.

Additional information:

Restricted to professional users.

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

26655-00-5 Perfluoro(alkoxy alkane)	10-20%
<i>Binder</i>	1-10%
Acute Tox. 4, H302	
1333-86-4 Carbon black	<5%
872-50-4 N-Methyl-2-pyrrolidone	20-30%
T Repr. Cat. 2 R61; Xi R36/37/38	
Repr. 1B, H360D	
Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	
127-19-5 N,N-Dimethylacetamide	15-25%
T Repr. Cat. 2 R61; Xn R20/21	
Repr. 1B, H360D	
Acute Tox. 4, H312; Acute Tox. 4, H332	
108-10-1 Methyl isobutyl ketone	15-25%
Xn R20; Xi R36/37; F R11	
R66	
Flam. Liq. 2, H225	
Acute Tox. 4, H332; Eye Irrit. 2, H319; STOT SE 3, H335	
1330-20-7 Xylene	1-10%
Xn R20/21; Xi R38	
R10	
Flam. Liq. 3, H226	
Acute Tox. 4, H312; Acute Tox. 4, H332; Skin Irrit. 2, H315	
Others	<5%

SVHC:

872-50-4 N-Methyl-2-pyrrolidone

127-19-5 N,N-Dimethylacetamide

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:

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.

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SECTION 5: Firefighting measures**5.1 Extinguishing media****Suitable extinguishing agents:**

Foam

Fire-extinguishing powder

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:**

Wear protective clothing.

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 7 for information on safe handling.

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.

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:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Use flame proof electric/lighting devices and ventilation equipment.

Ground/bond container and receiving equipment.

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Trade name: **NEOFLON PFA TC-1559M2****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.

Provide solvent resistant, sealed floor.

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:

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:****872-50-4 N-Methyl-2-pyrrolidone**IOELV (EU) Short-term value: 80 mg/m³, 20 ppmLong-term value: 40 mg/m³, 10 ppm

Skin

108-10-1 Methyl isobutyl ketoneIOELV (EU) Short-term value: 208 mg/m³, 50 ppmLong-term value: 83 mg/m³, 20 ppm**127-19-5 N,N-Dimethylacetamide**IOELV (EU) Short-term value: 72 mg/m³, 20 ppmLong-term value: 36 mg/m³, 10 ppm

Skin

1330-20-7 XyleneIOELV (EU) Short-term value: 442 mg/m³, 100 ppmLong-term value: 221 mg/m³, 50 ppm

Skin

100-41-4 EthylbenzeneIOELV (EU) Short-term value: 884 mg/m³, 200 ppmLong-term value: 442 mg/m³, 100 ppm

Skin

8.2 Exposure controls**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.

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Trade name: NEOFLON PFA TC-1559M2**Protection of hands:**

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 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:	Liquid
Colour:	Black
Odour:	Characteristic
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:	15,6 °C (SCC)
Explosion limits:	
Lower explosive limit:	1,4 Vol % (Methyl isobutyl ketone)
Upper explosive limit:	11,5 Vol % (N,N-Dimethylacetamide)
Vapour pressure:	No further information available.
Density:	No further information available.
Solubility in / Miscibility with water:	No further information available.
Partition coefficient: n-octanol/water:	No further information available.

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:**

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.

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Acute toxicity** Based on available data, the classification criteria are not met.

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Trade name: NEOFLON PFA TC-1559M2**LD/LC50 values relevant for classification:****872-50-4 N-Methyl-2-pyrrolidone**

Oral LD50 3914 mg/kg (Rat)

Dermal LD50 8000 mg/kg (Rabbit)

108-10-1 Methyl isobutyl ketone

Oral LD50 2080 mg/kg (Rat)

Dermal LD50 16000 mg/kg (rab)

Inhalative LC50/4 h 8,3-16,6 ppm (Rat)

127-19-5 N,N-Dimethylacetamide

Oral LD50 4930 mg/kg (Rat)

Dermal LD50 2240 mg/kg (Rabbit)

Primary irritant effect**Skin corrosion/irritation**

Causes skin irritation.

Serious eye damage/irritation

Causes serious eye irritation.

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

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

CMR effects**Carcinogenicity** Based on available data, the classification criteria are not met.**Reproductive toxicity**

May damage the unborn child.

STOT-single exposure

May cause respiratory irritation.

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.**Chronic study** No further information available.**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

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12.5 Results of PBT and vPvB assessment

PBT: No further relevant information available.

vPvB: No further relevant information available.

12.6 Other adverse effects: No further relevant information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Recommendation: 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 UN1263

14.2 UN proper shipping name:

ADR: 1263 PAINT

IMDG, IATA PAINT

14.3 Transport hazard class(es):

ADR, IMDG, IATA



Class: 3 Flammable liquids.

Label: 3

14.4 Packing group:

ADR, IMDG, IATA II

14.5 Environmental hazards:

Marine pollutant: No

14.6 Special precautions for user: Warning: Flammable liquids.

Danger code (Kemler): 33

EMS Number: F-E,S-E

14.7 Transport in bulk according to Annex II of

MARPOL73/78 and the IBC Code: 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.

ADR

Limited quantities (LQ): 5L

Excepted quantities (EQ) Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

Transport category: 2

Tunnel restriction code: D/E

IMDG

Limited quantities (LQ) 5L

Excepted quantities (EQ) Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

UN "Model Regulation": UN1263, PAINT, 3, II

*** 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: NEOFLON PFA TC-1559M2**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:***N-Methyl-2-pyrrolidone**N,N-Dimethylacetamide**Methyl isobutyl ketone***Hazard statements***H225 Highly flammable liquid and vapour.**H315 Causes skin irritation.**H319 Causes serious eye irritation.**H360D May damage the unborn child.**H335 May cause respiratory irritation.***Precautionary statements***P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.**P241 Use explosion-proof electrical/ventilating/lighting equipment.**P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.**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** *No further information available.***Other regulations, limitations and prohibitive regulations:****Substances of very high concern (SVHC) according to REACH, Article 57:***872-50-4 N-Methyl-2-pyrrolidone**127-19-5 N,N-Dimethylacetamide***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:***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**SVHC: Substances of Very High Concern**vPvB: very Persistent and very Bioaccumulative**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**Repr. 1B: Reproductive toxicity – Category 1B*

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

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