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.
SECTION 3: Composition/information on ingredients

Information on ingredients:

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

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.
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.
Exremely 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 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.
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 ppm
Long-term value: 40 mg/m³, 10 ppm
Skin

108-10-1 Methyl isobutyl ketone
IOELV (EU) Short-term value: 208 mg/m³, 50 ppm
Long-term value: 83 mg/m³, 20 ppm

127-19-5 N,N-Dimethylacetamide
IOELV (EU) Short-term value: 72 mg/m³, 20 ppm
Long-term value: 36 mg/m³, 10 ppm
Skin

1330-20-7 Xylene
IOELV (EU) Short-term value: 442 mg/m³, 100 ppm
Long-term value: 221 mg/m³, 50 ppm
Skin

100-41-4 Ethylbenzene
IOELV (EU) Short-term value: 884 mg/m³, 200 ppm
Long-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.
Protection of hands:

- Protective gloves

Material of gloves: Rubber

Penetration time of glove material
The exact break trough 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.
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.
Ecotoxical effects: no data
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.
Safety data sheet

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
Safety data sheet

Trade name: NEOFLON PFA TC-1559M2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
* Data compared to the previous version altered.