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Version number 1

Revision: 15.04.2020

*** SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier****Trade name: POLYFLON PTFE TC-7109BK****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:

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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**

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**Hazard-determining components of labelling:**

N-Methyl-2-pyrrolidone

Methyl isobutyl ketone

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 [or 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.

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Additional information:

EUH208 Contains Binder. May produce an allergic reaction.

Restricted to professional users.

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

| | |
|--|--------|
| CAS: 9002-84-0 Polytetrafluoroethylene | <5% |
| Binder | 5-15% |
| CAS: 1333-86-4 Carbon black | <5% |
| CAS: 872-50-4 N-Methyl-2-pyrrolidone | 45-55% |
| Repr. 1B, H360D | |
| Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335 | |
| CAS: 108-10-1 Methyl isobutyl ketone | 15-25% |
| Flam. Liq. 2, H225 | |
| Acute Tox. 4, H332; Eye Irrit. 2, H319; STOT SE 3, H335 | |
| Reaction mass of ethylbenzene and xylene | 1-10% |
| Flam. Liq. 3, H226 | |
| STOT RE 2, H373; Asp. Tox. 1, H304 | |
| Acute Tox. 4, H312; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335 | |
| Others | 5-15% |

SVHC:

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

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

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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.**Additional information about design of technical facilities:** No further data; see item 7.**Ingredients with limit values that require monitoring at the workplace:****CAS: 872-50-4 N-Methyl-2-pyrrolidone**OEL (Japan) Long-term value: 4 mg/m³, 1 ppm

WEEL (USA) Long-term value: 10 ppm

Skin

CAS: 108-10-1 Methyl isobutyl ketoneOEL (Japan) Long-term value: 200 mg/m³, 50 ppmPEL (USA) Long-term value: 410 mg/m³, 100 ppmREL (USA) Short-term value: 300 mg/m³, 75 ppmLong-term value: 205 mg/m³, 50 ppmTLV (USA) Short-term value: 307 mg/m³, 75 ppmLong-term value: 82 mg/m³, 20 ppm

BEI

CAS: 1330-20-7 XyleneOEL (Japan) Long-term value: 217 mg/m³, 50 ppmPEL (USA) Long-term value: 435 mg/m³, 100 ppmREL (USA) Short-term value: 655 mg/m³, 150 ppmLong-term value: 435 mg/m³, 100 ppmTLV (USA) Short-term value: 651 mg/m³, 150 ppmLong-term value: 434 mg/m³, 100 ppm

BEI

CAS: 1333-86-4 Carbon blackPEL (USA) Long-term value: 3.5 mg/m³REL (USA) Long-term value: 3.5* mg/m³

*0.1 in presence of PAHs; See Pocket Guide Apps.A+C

TLV (USA) Long-term value: 3* mg/m³

*inhalable fraction

Ingredients with biological limit values:**CAS: 872-50-4 N-Methyl-2-pyrrolidone**

BEI (USA) 100 mg/L

Medium: urine

Time: end of shift

Parameter: 5-Hydroxy-N-methyl-2-pyrrolidone

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Trade name: POLYFLON PTFE TC-7109BK

CAS: 108-10-1 Methyl isobutyl ketone

OEL-B (Japan) 1.7 mg/l

試料: 尿

試料採取時期: 作業終了時

物質: Methylisobutylketone

BEI (USA) 1 mg/L

Medium: urine

Time: end of shift

Parameter: MIBK

CAS: 1330-20-7 Xylene

OEL-B (Japan) 800 mg/l

試料: 尿

試料採取時期: 週末の作業終了時

物質: total (o-, m-, p-)methylhippuric acid

BEI (USA) 1.5 g/g creatinine

Medium: urine

Time: end of shift

Parameter: Methylhippuric acids

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 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 |
| Odour threshold: | Not determined. |
| pH-value: | No further information available. |
| Melting point/freezing point: | No further information available. |

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Trade name: POLYFLON PTFE TC-7109BK

Initial boiling point and boiling range: No further information available.**Flash point:** -2 °C (SCC)**Flammability (solid, gas):** Not applicable.**Ignition temperature:** 270 °C**Decomposition temperature:** No further information available.**Auto-ignition temperature:** Product is not selfigniting.**Explosive properties:** Product is not explosive. However, formation of explosive air/vapour mixtures are possible.**Explosion limits:****Lower explosive limit:** 1.3 Vol % (MIBK)**Upper explosive limit:** 9.5 Vol % (MIBK)**Vapour pressure at 20 °C:** 8 hPa
No further information available.**Density at 20 °C:** 1 g/cm³
No further information available.**Relative density** Not determined.**Vapour density** Not determined.**Evaporation rate** Not determined.**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:**

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:****CAS: 872-50-4 N-Methyl-2-pyrrolidone**

Oral LD50 3914 mg/kg (Rat)

Dermal LD50 8000 mg/kg (Rabbit)

CAS: 108-10-1 Methyl isobutyl ketone

Oral LD50 2080 mg/kg (Rat)

Dermal LD50 16000 mg/kg (rab)

Inhalative LC50/4h 8.2-16.4 mg/l (Rat)

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Trade name: POLYFLON PTFE TC-7109BK**CAS: 1330-20-7 Xylene**

Oral LD50 4300 mg/kg (Rat)

Dermal LD50 2000 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.**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:

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**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**

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.*** 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.**Other information****Ecotoxicological effects:** no data**12.5 Results of PBT and vPvB assessment****PBT:**

No further relevant information available.

No further relevant information available.

Not applicable.

vPvB:

No further relevant information available.

No further relevant information available.

Not applicable.

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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****Class:**

3 (F1) Flammable liquids.

Label:

3

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.

Hazard identification number (Kemler code):

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

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*** 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 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

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 [or 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.

Other regulations, limitations and prohibitive regulations: 尚未进行化学物质安全性评价**Substances of very high concern (SVHC) according to REACH, Article 57:**

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

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: Planning Dept.**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

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Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

Repr. 1B: Reproductive toxicity – Category 1B

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

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