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Version number 5

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier****Trade name: ZEFFLE GK-580****Article number: GK580****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. 3 H226 Flammable liquid and vapour.**STOT RE 1 H372 Causes damage to organs through prolonged or repeated exposure.**Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.***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.**P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.**P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.**P405 Store locked up.**P501 Dispose of contents/container in accordance with local/regional/national/international regulations.***SECTION 3: Composition/information on ingredients****Information on ingredients:**

Tetrafluoroethylene copolymer	45-55%
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8052-41-3 Mineral spirits(contains the following solvents)	45-55%
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T Carc. Cat. 2, Muta. Cat. 2 R45-46; Xn R48/20-65	
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Flam. Liq. 3, H226	
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Muta. 1B, H340; Carc. 1B, H350; STOT RE 1, H372; Asp. Tox. 1, H304	
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25551-13-7 Trimethylbenzene	5-15%
1330-20-7 Xylene Xn R20/21; Xi R38 R10 Flam. Liq. 3, H226 Acute Tox. 4, H312; Acute Tox. 4, H332; Skin Irrit. 2, H315	< 5%
100-41-4 Ethylbenzene Xn R20-48/20-65; F R11 Flam. Liq. 2, H225 STOT RE 2, H373; Asp. Tox. 1, H304 Acute Tox. 4, H332	< 1%
108-67-8 1,3,5-Trimethylbenzene Xi R37; N R51/53 R10 Flam. Liq. 3, H226 Aquatic Chronic 2, H411 STOT SE 3, H335	< 5%
95-63-6 1,2,4-Trimethylbenzene Xn R20; Xi R36/37/38; N R51/53 R10 Flam. Liq. 3, H226 Aquatic Chronic 2, H411 Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	< 5%

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:**

Immediately wash with water and soap and rinse thoroughly.

Remove contaminated clothes immediately.

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:

Dry sand

Fire-extinguishing powder

CO2

Alcohol resistant foam

Water haze

Water spray

For safety reasons unsuitable extinguishing agents: Water with full jet

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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 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:

Keep away from ignition sources.

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:

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.

There is a danger of explosion. Prepare fire extinguisher in case of emergency.

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.

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.

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Trade name: ZEFFLE GK-580**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:****108-67-8 1,3,5-Trimethylbenzene**IOELV (EU) Long-term value: 100 mg/m³, 20 ppm**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 the product is heated above 180 °C and toxic gases is formed.

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:

Light yellow

Odour:

Aromatic

pH-value:

No further information available.

Melting point/Melting range:

No further information available.

Boiling point/Boiling range:

No further information available.

Flash point:

40 °C (SCC)

Explosion limits:

No further information available.

Lower explosive limit:

No further information available.

Upper explosive limit:

No further information available.

Vapour pressure:

No further information available.

Density at 20 °C:0,958 g/cm³**Relative density**

Not determined.

Solubility in / Miscibility with**water:**

No further information available.

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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:** No further information available.**Primary irritant effect****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.**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** 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

May be fatal if swallowed and enters airways.

Chronic study No further information available.**SECTION 12: Ecological information****12.1 Toxicity****Aquatic toxicity:** No further relevant information available.

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Trade name: ZEFFLE GK-580**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.**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 III

14.5 Environmental hazards:

Marine pollutant: No

14.6 Special precautions for user: Warning: Flammable liquids.**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: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

IMDG**Excepted quantities (EQ)**

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

UN1263, PAINT, 3, III

UN "Model Regulation":**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

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Trade name: ZEFFLE GK-580**Hazard pictograms**

GHS02 GHS08

Signal word Danger**Hazard-determining components of labelling:***Solvent naphtha***Hazard statements***H226 Flammable liquid and vapour.**H372 Causes damage to organs through prolonged or repeated exposure.**H304 May be fatal if swallowed and enters airways.***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.**P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.**P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.**P405 Store locked up.**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)**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 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**vPvB: very Persistent and very Bioaccumulative**Flam. Liq. 3: Flammable liquids – Category 3**STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1**Asp. Tox. 1: Aspiration hazard – Category 1**** Data compared to the previous version altered.**