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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier****Trade name: ZEFFLE GK-500****Article number: GK500****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**

Flam. Liq. 3 H226 Flammable liquid and vapour.



STOT SE 3 H336 May cause drowsiness or dizziness.

**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:** Warning**Hazard-determining components of labelling:**

n-Butyl acetate

**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].

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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	55-65%
CAS: 123-86-4 n-Butyl acetate	35-45%
Flam. Liq. 3, H226	
STOT SE 3, H336	
EUH066	

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**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 immediate medical advice.

**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.

After contact with the molten product, cool rapidly with cold water.

**After eye contact:** Rinse opened eye for several minutes under running water.

**After swallowing:**

If symptoms persist consult a doctor.

Rinse mouth with water. Do not induce vomiting.

**Information for doctor:**

Vapors and fumes liberated during hot processing with this material may cause flu-like symptoms (chills, fever and, sometimes, cough) that may not occur until several hours after exposure and typically pass within about 36 to 48 hours.

**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:**

CO<sub>2</sub>

Dry sand

Fire-extinguishing powder

Alcohol resistant foam

Water spray

Water haze

**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.

**5.3 Advice for firefighters:** Remove receptacles from area of fire if possible.

**Protective equipment:**

Do not inhale explosion gases or combustion gases.

Wear self-contained breathing apparatus and protective suit.

Wear fully protective suit.

#### **SECTION 6: Accidental release measures**

##### **6.1 Personal precautions, protective equipment and emergency procedures:**

Wear appropriate protective devices (See Section 8 Exposure Controls/Personal Protection).

Avoid contact with eyes and skin.

Do not inhale the product.

Keep away from ignition sources.

**6.2 Environmental precautions:** Do not allow to enter sewers/surface or ground water.

**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.

Do not flush with water or aqueous cleansing agents

**6.4 Reference to other sections:**

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

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**SECTION 7: Handling and storage****7.1 Precautions for safe handling:**

Use only in well ventilated areas.

Extractors are required on all machines used for thermal processing or powder handling processes.

**Information about fire - and explosion protection:**

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

**7.2 Conditions for safe storage, including any incompatibilities:****Storage****Requirements to be met by storerooms and receptacles:**

Make floor, wall and columns of the storage location fire-resistant construction. Make beams noncombustible construction.

Store in a cool and dry location.

Provide solvent resistant, sealed floor.

**Information about storage in one common storage facility:** Store away from oxidising agents.

**Further information about storage conditions:**

Keep container tightly sealed.

Protect from heat and direct sunlight.

Store containers in a well ventilated area.

Store under lock and key and with access restricted to technical experts or their assistants only.

**7.3 Specific end use(s):** No further relevant information available.

**SECTION 8: Exposure controls/personal protection****8.1 Control parameters**

**Ingredients with limit values that require monitoring at the workplace:**

**CAS: 123-86-4 n-Butyl acetate**

OEL (Japan) 475 mg/m<sup>3</sup>, 100 ppm

PEL (USA) 710 mg/m<sup>3</sup>, 150 ppm

REL (USA) Short-term value: 950 mg/m<sup>3</sup>, 200 ppm

Long-term value: 710 mg/m<sup>3</sup>, 150 ppm

TLV (USA) Short-term value: 950 mg/m<sup>3</sup>, 200 ppm

Long-term value: 713 mg/m<sup>3</sup>, 150 ppm

**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.

Keep away from tobacco products.

Do not eat or drink while working.

**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.

**Hand protection**

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.

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**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**

<b>Physical state</b>	Fluid
<b>Colour:</b>	Light yellow
<b>Odour:</b>	Aromatic
<b>Melting point/freezing point:</b>	Undetermined.
<b>Boiling point or initial boiling point and boiling range</b>	124-125 °C (As n-butyl acetate)
<b>Flammability</b>	Product is not flammable.
<b>Lower and upper explosion limit</b>	
<b>Lower explosive limit:</b>	1.7 Vol % (As n-butyl acetate)
<b>Upper explosive limit:</b>	7.6 Vol % (As n-butyl acetate)
<b>Flash point:</b>	29 °C (SCC)
<b>Decomposition temperature:</b>	No further information available.
<b>pH</b>	Not determined.
<b>Viscosity:</b>	
<b>Kinematic viscosity</b>	No further information available.
<b>Solubility</b>	
<b>water:</b>	No further information available.
<b>Partition coefficient n-octanol/water (log value)</b>	No further information available.
<b>Vapour pressure:</b>	-
<b>Density and/or relative density</b>	
<b>Relative density at 20 °C</b>	1.12
<b>Vapour density</b>	No further information available.
<b>Particle characteristics</b>	Not applicable.

**9.2 Other information:**

<b>Form:</b>	Liquid
<b>Auto-ignition temperature:</b>	Product is not self-igniting.
<b>Explosive properties:</b>	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

**Information with regard to physical hazard classes**

<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>	
<b>Flammable liquid and vapour.</b>	
<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</b>	
<b>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

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Desensitised explosives

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:** Oxidizing agents**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** no data**LD/LC50 values relevant for classification:** No further information available.**Skin corrosion/irritation:** Based on available data, the classification criteria are not met.**Serious eye damage/irritation:** Based on available data, the classification criteria are not met.  
**after inhalation:** No further information available.**Respiratory or skin sensitisation:** Based on available data, the classification criteria are not met.**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:** Based on available data, the classification criteria are not met.**STOT-single exposure:**

May cause drowsiness or dizziness.

**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.**11.2 Information on other hazards:****Endocrine disrupting properties:**

None of the ingredients is listed.

**\* 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.**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:** 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 or ID number****ADR, IMDG, IATA**

UN1263

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

1263 PAINT, solution

**IMDG, IATA**

PAINT, solution

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**14.3 Transport hazard class(es):**

ADR, IMDG, IATA



<b>Class:</b>	3 Flammable liquids.
<b>Label:</b>	3
<b>14.4 Packing group:</b>	
<b>ADR, IMDG, IATA</b>	III
<b>14.5 Environmental hazards:</b>	
<b>Marine pollutant:</b>	No
<b>14.6 Special precautions for user:</b>	Warning: Flammable liquids.
<b>Hazard identification number (Kemler code):</b>	30
<b>EMS Number:</b>	F-E,S-D
<b>14.7 Maritime transport in bulk according to IMO instruments</b>	Not applicable.
<b>Transport/Additional information:</b>	
<b>ADR</b>	
<b>Limited quantities (LQ):</b>	5L
<b>Transport category:</b>	3
<b>Tunnel restriction code:</b>	D/E
<b>UN "Model Regulation":</b>	UN1263, PAINT, solution, 3, III

**\* 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

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

n-Butyl acetate

**Hazard statements**

H226 Flammable liquid and vapour.

H336 May cause drowsiness or dizziness.

**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].

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P405 Store locked up.

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

**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

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*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 relatif au transport international 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 SE 3: Specific target organ toxicity (single exposure) – Category 3*

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