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Safety data sheet according to Regulation (EC) No 1907/2006, Annex II

Revision date / version: 22.02.2019 / 0002

Replacing version dated / version: 16.04.2018 / 0001

Valid from: 22.02.2019 PDF print date: 08.03.2019 Kuehlerfrostschutz KFS 33 5 L

Art.: 21131

# Safety data sheet according to Regulation (EC) No 1907/2006, Annex II

# SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifier

# Kuehlerfrostschutz KFS 33 5 L

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# 1.2 Relevant identified uses of the substance or mixture and uses advised against Relevant identified uses of the substance or mixture:

Anti-freeze

Refrigerant

Corrosion protection

Sector of use [SU]:

SU 3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

SU10 - Formulation (mixing) of preparations and/or re-packaging (excluding alloys)

SU22 - Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

SU23 - Electricity, steam, gas water supply and sewage treatment

SU24 - Scientific research and development

#### **Uses advised against:**

Sector of use [SU]:

SU 4 - Manufacture of food products

SU18 - Manufacture of furniture

SU20 - Health services

# 1.3 Details of the supplier of the safety data sheet

LIQUI MOLY GmbH, Jerg-Wieland-Str. 4, 89081 Ulm-Lehr, Germany Phone: (+49) 0731-1420-0, Fax: (+49) 0731-1420-88

Qualified person's e-mail address: info@chemical-check.de, k.schnurbusch@chemical-check.de Please DO NOT use for requesting Safety Data Sheets.

# 1.4 Emergency telephone number

# Emergency information services / official advisory body:

#### Telephone number of the company in case of emergencies:

+49 (0) 700 / 24 112 112 (LMR)

#### **SECTION 2: Hazards identification**

# 2.1 Classification of the substance or mixture

Classification according to Regulation (EC) 1272/2008 (CLP)

Hazard class Hazard category **Hazard statement** 

Acute Tox. 4 H302-Harmful if swallowed.

2 STOT RE H373-May cause damage to organs through prolonged

or repeated exposure (kidneys).

#### 2.2 Label elements

Labeling according to Regulation (EC) 1272/2008 (CLP)



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H302-Harmful if swallowed. H373-May cause damage to organs through prolonged or repeated exposure (kidneys).

P101-If medical advice is needed, have product container or label at hand. P102-Keep out of reach of children.

P260-Do not breathe vapours or spray. P270-Do not eat, drink or smoke when using this product.

P314-Get medical advice / attention if you feel unwell.

P501-Dispose of contents / container to an approved waste disposal facility.

Ethanediol

#### 2.3 Other hazards

The mixture does not contain any vPvB substance (vPvB = very persistent, very bioaccumulative) or is not included under XIII of the regulation

The mixture does not contain any PBT substance (PBT = persistent, bioaccumulative, toxic) or is not included under XIII of the regulation (EC) 1907/2006 (< 0,1 %).

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

#### 3.1 Substance

# n.a. 3.2 Mixture

Ethanediol	Substance for which an EU exposure limit value applies.
Registration number (REACH)	01-2119456816-28-XXXX
Index	603-027-00-1
EINECS, ELINCS, NLP	203-473-3
CAS	107-21-1
content %	80-100
Classification according to Regulation (EC) 1272/2008 (CLP)	Acute Tox. 4, H302
	STOT RE 2, H373 (kidneys)

For the text of the H-phrases and classification codes (GHS/CLP), see Section 16.

The substances named in this section are given with their actual, appropriate classification!

For substances that are listed in appendix VI, table 3.1 of the regulation (EC) no. 1272/2008 (CLP regulation) this means that all notes that may be given here for the named classification have been taken into account.

# **SECTION 4: First aid measures**

#### 4.1 Description of first aid measures

First-aiders should ensure they are protected!

Never pour anything into the mouth of an unconscious person!

#### Inhalation

Remove person from danger area.

Supply person with fresh air and consult doctor according to symptoms.

# Skin contact



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Remove polluted, soaked clothing immediately, wash thoroughly with plenty of water and soap, in case of irritation of the skin (flare), consult a doctor

#### Eye contact

Remove contact lenses.

Wash thoroughly for several minutes using copious water. Seek medical help if necessary.

#### Ingestion

Rinse the mouth thoroughly with water.

Give copious water to drink - consult doctor immediately.

In case of vomiting, keep head low so that the stomach content does not reach the lungs.

# 4.2 Most important symptoms and effects, both acute and delayed

If applicable delayed symptoms and effects can be found in section 11 and the absorption route in section 4.1.

In certain cases, the symptoms of poisoning may only appear after an extended period / after several hours.

Irritation of the eyes

Drying of the skin.

Cramps

drowsiness

Nausea

Vomiting

lower abdominal pain

oedema of the lungs

# 4.3 Indication of any immediate medical attention and special treatment needed

Symptomatic treatment.

# **SECTION 5: Firefighting measures**

# 5.1 Extinguishing media

# Suitable extinguishing media

Water jet spray / alcohol resistant foam / CO2 / dry extinguisher

# Unsuitable extinguishing media

High volume water jet

#### 5.2 Special hazards arising from the substance or mixture

In case of fire the following can develop:

Oxides of carbon

Toxic gases

#### 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes.

Protective respirator with independent air supply.

According to size of fire

Full protection, if necessary.

Dispose of contaminated extinction water according to official regulations.

# **SECTION 6: Accidental release measures**

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

Keep unprotected persons away.

Ensure sufficient supply of air.

Avoid contact with eyes or skin.

If applicable, caution - risk of slipping.

#### 6.2 Environmental precautions

If leakage occurs, dam up.

Resolve leaks if this possible without risk.

Prevent surface and ground-water infiltration, as well as ground penetration.

Prevent from entering drainage system.

If accidental entry into drainage system occurs, inform responsible authorities.

#### 6.3 Methods and material for containment and cleaning up

Installation of barriers, covering sewers.

Soak up with absorbent material (e.g. universal binding agent, sand, diatomaceous earth, sawdust) and dispose of according to Section 13. Fill the absorbed material into lockable containers.



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Flush\_residue using copious water.

# 6.4 Reference to other sections

For personal protective equipment see Section 8 and for disposal instructions see Section 13.

# **SECTION 7: Handling and storage**

In addition to information given in this section, relevant information can also be found in section 8 and 6.1.

# 7.1 Precautions for safe handling

#### 7.1.1 General recommendations

Ensure good ventilation.

Avoid aerosol formation.

Avoid contact with eyes or skin.

Eating, drinking, smoking, as well as food-storage, is prohibited in work-room.

Observe directions on label and instructions for use.

Use working methods according to operating instructions.

### 7.1.2 Notes on general hygiene measures at the workplace

General hygiene measures for the handling of chemicals are applicable.

Wash hands before breaks and at end of work.

Keep away from food, drink and animal feedingstuffs.

Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

# 7.2 Conditions for safe storage, including any incompatibilities

Keep out of access to unauthorised individuals.

Not to be stored in gangways or stair wells.

Store product closed and only in original packing.

Store in a well ventilated place.

Store in a dry place.

# 7.3 Specific end use(s)

No information available at present.

# **SECTION 8: Exposure controls/personal protection**

# 8.1 Control parameters

Chemical Name	Ethanediol			Content %:80- 100
WEL-TWA: 10 mg/m3 (particulate),		WEL-STEL: 104 mg/m3 (vapour) (WEL), 40 ppm		
(vapour) (WEL), 20 ppm (52 mg/m3)	(EU)	(104 mg/m3) (EU)		
Monitoring procedures:	-	Compur - KITA-232 SA (502 342)		
	- Compur - KITA-232 SB (550 267)			
	- Draeger - Ethylene Glycol 10 (5) (81 01 351)			
	- NIOSH 5523 (Glycols) - 1996			
OSHA PV2024 (Ethylene glycol) - 1999 - EU project BC/CEN/ENTR/000/2002-16 card				
	-	- 11-2 (2004)		
	-	Draeger - Álcohol 100/a (CH 29 701)		
BMGV:		Other information: SI	κ (particul	ate, vapour)

<sup>WEL-TWA = Workplace Exposure Limit - Long-term exposure limit (8-hour TWA (= time weighted average) reference period) EH40. AGW =
"Arbeitsplatzgrenzwert" (workplace limit value, Germany).</sup> 

\*\* = The exposure limit for this substance is repealed through the TRGS 900 (Germany) of January 2006 with the goal of revision.

#### 8.2 Exposure controls

#### 8.2.1 Appropriate engineering controls

<sup>(8) =</sup> Inhalable fraction (2017/164/EU, 2017/2398/EU). (9) = Respirable fraction (2017/164/EU, 2017/2398/EU). | WEL-STEL = Workplace Exposure Limit - Short-term exposure limit (15-minute reference period).

<sup>(8) =</sup> Inhalable fraction (2017/164/EU, 2017/2398/EU). (9) = Respirable fraction (2017/164/EU, 2017/2398/EU). (10) = Short-term exposure limit value in relation to a reference period of 1 minute (2017/164/EU). | BMGV = Biological monitoring guidance value EH40. BGW = "Biologischer Grenzwert" (biological limit value, Germany) | Other information: Sen = Capable of causing occupational asthma. Sk = Can be absorbed through skin. Carc = Capable of causing cancer and/or heritable genetic damage.



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Ensure good ventilation. This can be achieved by local suction or general air extraction.

If this is insufficient to maintain the concentration under the WEL or AGW values, suitable breathing protection should be worn.

Applies only if maximum permissible exposure values are listed here.

Suitable assessment methods for reviewing the effectiveness of protection measures adopted include metrological and non-metrological investigative techniques.

These are specified by e.g. BS EN 14042.

BS EN 14042 "Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents".

# 8.2.2 Individual protection measures, such as personal protective equipment

General hygiene measures for the handling of chemicals are applicable.

Wash hands before breaks and at end of work.

Keep away from food, drink and animal feedingstuffs.

Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

Eye/face protection:

Tight fitting protective goggles (EN 166) with side protection, with danger of splashes.

Skin protection - Hand protection:

Chemical resistant protective gloves (EN 374).

Recommended

Safety gloves made of butyl (EN 374)

Protective Neoprene® / polychloroprene gloves (EN 374).

Protective nitrile gloves (EN 374)

Protective Viton® / fluoroelastomer gloves (EN 374)

Minimum layer thickness in mm:

0,38

Permeation time (penetration time) in minutes:

480

Protective hand cream recommended.

The breakthrough times determined in accordance with EN 16523-1 were not obtained under practical conditions.

The recommended maximum wearing time is 50% of breakthrough time.

Skin protection - Other:

Protective working garments (e.g. safety shoes EN ISO 20345, long-sleeved protective working garments).

Respiratory protection:

If OES or MEL is exceeded.

Gas mask filter A (EN 14387), code colour brown

Observe wearing time limitations for respiratory protection equipment.

Thermal hazards:

Not applicable

Additional information on hand protection - No tests have been performed.

In the case of mixtures, the selection has been made according to the knowledge available and the information about the contents. Selection of materials derived from glove manufacturer's indications.

Final selection of glove material must be made taking the breakthrough times, permeation rates and degradation into account. Selection of a suitable glove depends not only on the material but also on other quality characteristics and varies from manufacturer to manufacturer.

In the case of mixtures, the resistance of glove materials cannot be predicted and must therefore be tested before use.

The exact breakthrough time of the glove material can be requested from the protective glove manufacturer and must be observed.

#### 8.2.3 Environmental exposure controls

No information available at present.

# **SECTION 9: Physical and chemical properties**

#### 9.1 Information on basic physical and chemical properties

Physical state:

Liquid

Colour:

Darkish, Blue, Green, Clear



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Odour: Slightly Not determined Odour threshold: pH-value: 8,28 (20°C)

Melting point/freezing point: -18 °C (Freezing point) Initial boiling point and boiling range: 180 °C (ASTM D 1120)

~122 °C (Pensky-Martens, closed cup) Flash point:

Evaporation rate: Not determined

Flammability (solid, gas): Lower explosive limit: Not determined Upper explosive limit: Not determined

Vapour pressure: Not determined Vapour density (air = 1): Not determined

Density: 1,134 kg/l (20°C, ASTM D 5931) Bulk density: n.a.

Solubility(ies): Not determined Water solubility: Mixable Partition coefficient (n-octanol/water): Not determined

>300 °C (ASTM E 659) Auto-ignition temperature: Decomposition temperature: Not determined Viscosity: Not determined

Explosive properties: Product is not explosive.

Oxidising properties:

9.2 Other information

Miscibility: Not determined Fat solubility / solvent: Not determined Conductivity: Not determined Surface tension: Not determined

Solvents content: 4 % (water, ASTM D1123)

# **SECTION 10: Stability and reactivity**

n.a.

# 10.1 Reactivity

The product has not been tested.

# 10.2 Chemical stability

Stable with proper storage and handling.

# 10.3 Possibility of hazardous reactions

No dangerous reactions are known.

#### 10.4 Conditions to avoid

Strong heat

#### 10.5 Incompatible materials

Avoid contact with strong oxidizing agents.

Avoid contact with strong acids.

#### 10.6 Hazardous decomposition products

No decomposition when used as directed.

# **SECTION 11: Toxicological information**

# 11.1 Information on toxicological effects

Possibly more information on health effects, see Section 2.1 (classification).

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Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	ATE	1763	mg/kg			calculated value
Acute toxicity, by dermal route:						n.d.a.
Acute toxicity, by inhalation:						n.d.a.
Skin corrosion/irritation:						n.d.a.
Serious eye damage/irritation:						n.d.a.
Respiratory or skin						n.d.a.
sensitisation:						



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Germ cell mutagenicity:		n.c	d.a.
Carcinogenicity:		n.c	d.a.
Reproductive toxicity:		n.c	d.a.
Specific target organ toxicity -		n.c	d.a.
single exposure (STOT-SE):			
Specific target organ toxicity -		n.c	d.a.
repeated exposure (STOT-RE):			
Aspiration hazard:		n.c	d.a.
Symptoms:		n.c	d.a.

# **SECTION 12: Ecological information**

Possibly more information on environmental effects, see Section 2.1 (classification).

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Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:							n.d.a.
12.1. Toxicity to daphnia:							n.d.a.
12.1. Toxicity to algae:							n.d.a.
12.2. Persistence and degradability:							n.d.a.
12.3. Bioaccumulative							n.d.a.
potential:							
12.4. Mobility in soil:							n.d.a.
12.5. Results of PBT							n.d.a.
and vPvB assessment							
12.6. Other adverse							n.d.a.
effects:							
Other information:	AOX						n.a.
Other information:	DOC						DOC-elimination
							degree(complexi
							ng organic
							substance)>=
							80%/28d: n.a.

# **SECTION 13: Disposal considerations**

# 13.1 Waste treatment methods

# For the substance / mixture / residual amounts

EC disposal code no.:

The waste codes are recommendations based on the scheduled use of this product. Owing to the user's specific conditions for use and disposal, other waste codes may be allocated under certain circumstances. (2014/955/EU)

16 01 14 antifreeze fluids containing hazardous substances

Recommendation:

Sewage disposal shall be discouraged.

Pay attention to local and national official regulations.

E.g. suitable incineration plant.

E.g. dispose at suitable refuse site.

# For contaminated packing material

Pay attention to local and national official regulations.

Empty container completely.

Dispose of packaging that cannot be cleaned in the same manner as the substance.

Uncontaminated packaging can be recycled.

# **SECTION 14: Transport information**

# **General statements**



(GB)-

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14.1. UN number:

# Transport by road/by rail (ADR/RID)

14.2. UN proper shipping name:14.3. Transport hazard class(es):n.a.14.4. Packing group:n.a.Classification code:n.a.LQ:n.a.

14.5. Environmental hazards: Not applicable

Tunnel restriction code:

#### Transport by sea (IMDG-code)

14.2. UN proper shipping name:
14.3. Transport hazard class(es):
14.4. Packing group:
n.a.
Marine Pollutant:
n.a

14.5. Environmental hazards: Not applicable

#### Transport by air (IATA)

14.2. UN proper shipping name:

14.3. Transport hazard class(es):

n.a.
14.4. Packing group:

n.a.

14.5. Environmental hazards:

Not applicable

# 14.6. Special precautions for user

Unless specified otherwise, general measures for safe transport must be followed.

#### 14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Non-dangerous material according to Transport Regulations.

# **SECTION 15: Regulatory information**

n.a.

#### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Observe restrictions:

Comply with national regulations/laws governing the protection of young people at work (national implementation of the Directive 94/33/EC)! Comply with national regulations/laws governing maternity protection (national implementation of the Directive 92/85/EEC)! Comply with trade association/occupational health regulations.

Directive 2010/75/EU (VOC):

0,3 %

# 15.2 Chemical safety assessment

A chemical safety assessment is not provided for mixtures.

# **SECTION 16: Other information**

Revised sections:

n.a.

These details refer to the product as it is delivered.

Employee instruction/training in handling hazardous materials is required.

# Classification and processes used to derive the classification of the mixture in accordance with the ordinance (EG) 1272/2008 (CLP):

Classification in accordance with regulation	Evaluation method used
(EC) No. 1272/2008 (CLP)	
Acute Tox. 4, H302	Classification according to calculation procedure.
STOT RE 2, H373	Classification according to calculation procedure.

The following phrases represent the posted Hazard Class and Risk Category Code (GHS/CLP) of the product and the constituents (specified in Section 2 and 3).

H302 Harmful if swallowed.

H373 May cause damage to organs through prolonged or repeated exposure.



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Acute Tox. — Acute toxicity - oral STOT RE — Specific target organ toxicity - repeated exposure

# Any abbreviations and acronyms used in this document:

AC **Article Categories** 

acc., acc. to according, according to

ACGIH American Conference of Governmental Industrial Hygienists

Accord européen relatif au transport international des marchandises Dangereuses par Route (= European Agreement concerning the

International Carriage of Dangerous Goods by Road)

AOEL Acceptable Operator Exposure Level AOX Adsorbable organic halogen compounds

approx. approximately

Article number Art., Art. no.

Acute Toxicity Estimate according to Regulation (EC) 1272/2008 (CLP) ATE

Bundesanstalt für Materialforschung und -prüfung (Federal Institute for Materials Research and Testing, Germany) BAM

BAuA Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (= Federal Institute for Occupational Health and Safety, Germany)

BCF Bioconcentration factor

Berufsgenossenschaftliche Vorschrift (= Accident Prevention Regulation) BGV

BHT Butylhydroxytoluol (= 2,6-Di-t-butyl-4-methyl-phenol) BMGV Biological monitoring guidance value (EH40, UK)

BOD Biochemical oxygen demand

BSEF Bromine Science and Environmental Forum

bw body weight

CAS Chemical Abstracts Service

Coordinating European Council for the Development of Performance Tests for Fuels, Lubricants and Other Fluids CEC

CESIO Comité Européen des Agents de Surface et de leurs Intermédiaires Organiques

CIPAC Collaborative International Pesticides Analytical Council

CLP Classification, Labelling and Packaging (REGULATION (EC) No 1272/2008 on classification, labelling and packaging of substances

and mixtures)

CMR carcinogenic, mutagenic, reproductive toxic

COD Chemical oxygen demand

CTFA Cosmetic, Toiletry, and Fragrance Association

DMEL Derived Minimum Effect Level DNEL Derived No Effect Level DOC Dissolved organic carbon

DT50 Dwell Time - 50% reduction of start concentration

Deutscher Verband für Schweißen und verwandte Verfahren e.V. (= German Association for Welding and Allied Processes) DVS

dw dry weight

e.g. EC for example (abbreviation of Latin 'exempli gratia'), for instance

**European Community ECHA European Chemicals Agency** FFA European Economic Area **EEC European Economic Community** 

European Inventory of Existing Commercial Chemical Substances **EINECS** 

**ELINCS** European List of Notified Chemical Substances

ΕN European Norms

United States Environmental Protection Agency (United States of America) **FPA** 

**ERC Environmental Release Categories** 

ES Exposure scenario

etc. et cetera

EU European Union

**EWC** European Waste Catalogue

Fax. general gen.

GHS Globally Harmonized System of Classification and Labelling of Chemicals

**GWP** Global warming potential

HET-CAM Hen's Egg Test - Chorionallantoic Membrane

**HGWP Halocarbon Global Warming Potential** International Agency for Research on Cancer IARC IATA International Air Transport Association

**IBC** Intermediate Bulk Container



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IBC (Code) International Bulk Chemical (Code)

IC Inhibitory concentration

IMDG-code International Maritime Code for Dangerous Goods

incl. including, inclusive

**IUCLID International Uniform Chemical Information Database** 

LC lethal concentration

LC50 lethal concentration 50 percent kill LCLo lowest published lethal concentration

LD Lethal Dose of a chemical LD50 Lethal Dose, 50% kill LDLo Lethal Dose Low

LOAEL Lowest Observed Adverse Effect Level LOEC Lowest Observed Effect Concentration

LOEL Lowest Observed Effect Level

LQ Limited Quantities

MARPOL International Convention for the Prevention of Marine Pollution from Ships

n.a. not applicable
n.av. not available
n.c. not checked
n.d.a. no data available

NIOSH National Institute of Occupational Safety and Health (United States of America)

NOAECNo Observed Adverse Effective Concentration

NOAEL No Observed Adverse Effect Level NOEC No Observed Effect Concentration NOEL No Observed Effect Level

ODP Ozone Depletion Potential

OECD Organisation for Economic Co-operation and Development

org. organic

PAH polycyclic aromatic hydrocarbon
PBT persistent, bioaccumulative and toxic
Chamical product extension

PC Chemical product category

PE Polyethylene

PNEC Predicted No Effect Concentration
POCP Photochemical ozone creation potential

ppm parts per million PROC Process category PTFE Polytetrafluorethylene

REACHRegistration, Evaluation, Authorisation and Restriction of Chemicals (REGULATION (EC) No 1907/2006 concerning the Registration,

Evaluation, Authorisation and Restriction of Chemicals)

REACH-IT List-No. 9xx-xxx-x No. is automatically assigned, e.g. to pre-registrations without a CAS No. or other numerical identifier. List Numbers do not have any legal significance, rather they are purely technical identifiers for processing a submission via REACH-IT.

RID Règlement concernant le transport International ferroviaire de marchandises Dangereuses (= Regulation concerning the International

Carriage of Dangerous Goods by Rail)

SADT Self-Accelerating Decomposition Temperature

SAR Structure Activity Relationship

SU Sector of use

SVHC Substances of Very High Concern

Tel. Telephone

ThOD Theoretical oxygen demand

TOC Total organic carbon

TRGS Technische Regeln für Gefahrstoffe (=Technical Regulations for Hazardous Substances)
UN RTDG United Nations Recommendations on the Transport of Dangerous Goods
VbF Verordnung über brennbare Flüssigkeiten (= Regulation for flammable liquids (Austria))

VOC Volatile organic compounds

vPvB very persistent and very bioaccumulative

WEL-TWA, WEL-STEL WEL-TWA = Workplace Exposure Limit - Long-term exposure limit (8-hour TWA (= time weighted average) reference period), WEL-STEL = Workplace Exposure Limit - Short-term exposure limit (15-minute reference period) (EH40, UK).

WHO World Health Organization

wwt wet weight

The statements made here should describe the product with regard to the necessary safety precautions - they are not meant to guarantee definite characteristics - but they are based on our present up-to-date knowledge. No responsibility.



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