

**EG-Safety data sheet (group material safety data sheet)**

According to article 31 Regulation (EC) No 1907/2006 (REACH) and Directive 98/24/EC

Date of issue: 15.06.2007

Date revised: 15.06.2007

Version 15WM\_E

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## 1. Identification of the preparation and of the company

### Identification and use of the preparation:

**Group I:** PVC-Cold-Welding Paste (Type C), PVC-Cold-Welding Paste (Type T), PVC-Seal Paste (Use: Welding of PVC-Floor- and Wall-Coverings, PVC Foils and other PVC Materials).

**Group II:** PVC-Cold-Welding Liquid (Type A), PVC-Seal-Cold-Welding Fluid, (Use: Welding of PVC-Floor- and Wall-Coverings, PVC Foils and other PVC Materials).

**Group III:** Cleansing-Container, Refill Liquid for Cleansing-Container (Use: Cleaning of nozzles)

All preparations show almost identical physical-chemical, safety technical, toxic and ecological properties. The groups I, II + III differ in point 3 (composition / information on ingredients), point 10 (stability and reactivity) and point 14 (transport information).

### Company identification:

#### Manufacturer:

Werner Müller GmbH, Rudolf-Diesel-Str. 7, D-67227 Frankenthal

Phone: +49-6233-3793-0; Fax: +49-6233-3793-20

Point of Contact: Mr. Pauers, e-mail: info@mueller-pvc-naht.de

### Emergency telephone:

**Poison Control Center: Emergency number: + 49-6131-19240**

## 2. Hazards identification

### Indications of danger for dangerous substances and preparations:

Highly flammable.

May form explosive peroxides.

Irritating to eyes and skin.

## 3. Composition/information on ingredients

	percentage Tetrahydrofuran (stabilized)
Group I:	80-89 %
Group II:	90-95 %
Group III:	98-100 %

Tetrahydrofuran (stabilized):

CAS-Nr.: 109-99-9

EG-Nr.: 203-726-8

Index-Nr.: 603-025-00-0

F highly flammable, Xi irritant, R11, R19, R36/37 (see point 15)

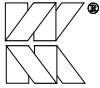
Further information see no. 8 "Exposure Controls and Personal Protection"

## 4. First-aid measures

**Poison Control Center: Emergency number: + 49-6131-19240**

### General Advice:

Immediately remove contaminated clothing. If danger of loss of consciousness, place patient in recovery position and transport accordingly. Apply artificial respiration if necessary. Helper pay attention to your own safety.



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## 4. First-aid measures

**Inhalation:** keep patient calm, remove to fresh air, summon medical help.

**Skin contact:** Immediately wash thoroughly with soap and water, consult a skin specialist.

**Eye contact:** Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

**Ingestion:** Rinse mouth immediately and then drink plenty of water, summon medical help.

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## 5. Fire-fighting measures

**Suitable extinguishing media:** water, dry powder, foam, carbon dioxide (CO<sub>2</sub>).

**Special protective equipment:** In case of fire, wear a self-contained breathing apparatus and chemical-protective clothing.

**Further information:** Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems.

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## 6. Accidental release measures

**Personal precautions:** In case of unintended release insure sufficient ventilation / sufficient breathing protection. Avoid contact with eyes and skin. Remove sources of ignition (to this see also no. 8).

**Environmental precautions:** Do not allow to reach sewerage, surface- and underground water as well as ground.

**Methods for cleaning up:** Absorb small amounts with absorbent material and dispose correctly. Larger spills should be dammed-off and pumped into containers; (Pay attention to explosive atmosphere); Soak up remainder with absorbent material and dispose of in accordance with local regulations (see point 13).

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## 7. Handling and storage

### Handling:

Protection against fire and explosion: Ensure thorough ventilation of storage and work areas.

Prevent electrostatic charge – sources of ignition should be kept well clear.

### Storage:

Prevent contact with air / oxygen (formation of peroxide).

For storage do not use containers out of PVC.

Storage class 3A: Flammable liquid substances (concept of the German Association of Chemical Industry)

Products are always to be kept dry, free of frost and not stored above 30 °C. Best temperature for use is from 16 to 25 °C. Ensure sufficient air circulation during workmanship. Close tube/can always tightly. The last digit of the 6-digit code on the fold of the tube resp. on the label on the bottom of the can shows the year in which the product was manufactured, both digits before the last one show the month. The durability lasts 3 years from the date of manufacturing (see fold of tube or label) if storage conditions are kept as described above.

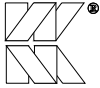
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## 8. Exposure controls/personal protection

**Threshold at the workplace has to be considered (Germany):**

**Tetrahydrofuran CAS-No. 109-99-9**

AGW: 150 mg/m<sup>3</sup>; 50 qqm (TRGS 900 (DE))



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## 8. Exposure controls/personal protection

Peak limit factor / Exceeding factor: 2

A risk of embryonic damage has not to be feared if the working place threshold is met.

Dermal effect (TRGS 900 (DE)). Substance can be absorbed through the skin.

STEL C (TRGS 900 (DE))

Category I: Substances for whose located effect an assigned OEL exists, or substances with a sensitizing effect to the respiratory tract.

### Limits and monitoring of the exposition:

For above mentioned preparations measurements were taken at the workplace in cooperation with the mutual indemnity associations of the construction industry to determine the exposition of the Werner Müller PVC-Cold Welding Liquids and-Pastes during workmanship. The entire description of the exposition has been published in the "*Handbuch Bauchemikalien*" (Construction Chemicals' Handbook) (33<sup>rd</sup> supplement 12/2004) which is published by the mutual indemnity associations of the construction industry (edited by Dr. Reinhold Rühl, Norbert Kluger) and available at the Ecomed-Verlag (Publishers), Landsberg am Lech (Germany).

22 measurements were less than half the threshold value, only one of the measurements revealed exposure in excess of the threshold value. In total, the measurements taken prove according to TRGS 402 (Monitoring and Assessment of the Concentration of Hazardous Substances in the Air at Workplaces) appendix 1 that the threshold value for tetrahydrofuran is not exceeded when Werner Müller PVC Cold Welding-Liquids and -Pastes are used.

	Measurements	Average	95 percentile	Minimum	Maximum
Tetrahydrofuran	29	60.6 mg/m <sup>3</sup>	138.2 mg/m <sup>3</sup>	2.0 mg/m <sup>3</sup>	213.0 mg/m <sup>3</sup>

**Based on the results given it is not necessary to take any further measurements of exposure in companies and on building sites where Werner Müller PVC Cold Welding Liquids and Pastes are used! The threshold of tetrahydrofuran and the peak limit factor are not exceeded.**

**No need to take action for respiratory protection if used properly.**

### Personal protective equipment:

**Respiratory protection:** No need according to the exposure description above, if used properly.  
In exceptional circumstances like accidental disposal, wearing respiratory protection is necessary.

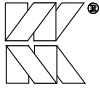
Gas filter for organic gas and vapours: Type A.

**Hand protection:** Chemical Protection Gloves out of nitrile-butadien-rubber with a minimum thickness of 0.4 mm are suitable to be used for splash protection. Latest 5 minutes after contamination with the chemical, take off the skin protection and reject.

Suitable Products are for example: Comatril from the company Comasec Phone: +49-(0)6821-8608-0 or  
Camatril from the company KCL Phone: +49-(0)6659-87-0

**Protection of the body:** closed working clothes

**General safety and hygiene measures:** Usual Safety Precautions for the handling of chemicals are to be observed. Avoid contact with skin, eyes, clothing and the inhaling of vapors.



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## 9. Physical and chemical properties

**Form:** liquid to paste like

**Color:** various

**Change in physical state:**

Melting point / Melting range:

-108 °C

Boiling point / Boiling range:

65,5 °C – 66,5 °C

Flash point:

-21,5 °C

(DIN 51 755)

**Explosion limits:**

lower:

1,5 Vol.%

upper:

12,0 Vol.%

**Ignition temperature:**

230 °C

(DIN 51 794)

**Vapor pressure:**

173 mbar (20°C)

**Density:**

0.8870 g/cm<sup>3</sup> (20°C)

**Solubility in water:**

(20°C) partially miscible

**Solubility in other solvents:**

miscible with many organic solvents.

**pH-value:**

(at 200g/l, 20°C) 7 – 8.

**Partition coefficient:**

n-Octanol/Water (log Pow): 0,45.

**Viscosity:**

0,5-2045 mPa s

## 10. Stability and reactivity

**Conditions/Substances to be avoided:**

Minimize exposure to oxygen/air.

Minimize exposure to light.

**Hazardous reactions:**

Development of peroxides.

**Hazardous decomposition products:**

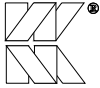
Group I+ II: Peroxides, in case of fire: Hydrogen chloride (HCL)

Group III: Peroxides

## 11. Toxicological information

**Acute toxicity**

**Virtually nontoxic after single ingestion. Virtually nontoxic by single inhalation. Inhalation-risk test (IRT): Mortality within 60 minutes as shown in animal studies. The inhalation of a highly saturated vapour-air mixture represents an acute hazard. High concentrations in the air may cause narcosis. The substance can be absorbed through the skin.**



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## 11. Toxicological Information

LD50 rat (oral): 4.430 mg / kg (BASF-Test).

LC50 rat (by inhalation): 66 mg/l 22000 ppm 4 h (BASF-Test).

### Irritation

#### Irritating to eyes and respiratory system. EU-classification

Primary skin irritation / rabbit / BASF-Test: Irritant.

Primary irritations of the mucous membrane / Literature data: Irritant.

### Sensitization

#### Skin sensitizing effects were not observed in animal studies.

Guinea pig: Non-sensitizing (Literature data).

### Genetic toxicity

Most of the results from the numerous studies available show no evidence of a mutagenic effect.

### Reproductive toxicity

The results of animal studies gave no indication of a fertility impairing effect.

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## 12. Ecological information

### Ecotoxicity

Assessment of aquatic toxicity:

**There is a high probability that the product is not acutely harmful to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.**

Toxicity to fish:

LC50, 96 h, 2,160 mg/l, Pimephales promelas, Flow through.

The statement of the toxic effect relates to the analytically determined concentration. Literature data.

Aquatic invertebrates:

EC50, 24 h, 5,930 mg/l, Daphnia magna, DIN 38412 Part 11, static.

The details of the toxic effect relate to the nominal concentration. Literature data.

Aquatic plants:

EC50, 8 d, > 3,700 mg/l, Scenedesmus quadricauda, DIN 38412 Part 9, static

The details of the toxic effect relate to the nominal concentration. Literature data.

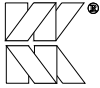
Microorganisms/Effect on activated sludge:

EC50, 16 h, > 580 mg/l, Pseudomonas putida, DIN 38412 Part 8, aquatic

The details of the toxic effect relate to the nominal concentration. Literature data.

EC20, 0.5 h, approx. 800 mg/l, activated sludge, domestic, OECD Guideline 209, aquatic

The details of the toxic effect relate to the nominal concentration.



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## 12. Ecological information

### Persistence and degradability

Assessment biodegradation and elimination (H<sub>2</sub>O):

**Biodegradable.**

Elimination information:

80 - 90 % BOD of the ThOD (28 d) (OECD Guideline 301 F) (aerobic, activated sludge, adapted)

90 - 100 % BOD of the ThOD (14 d) (OECD Guideline 301C; ISO 9408; 92/69/EEC, C.4-F) (activated sludge). Literature data.

### Bioaccumulation potential

Because of the n-octanol/water distribution coefficient (log POW) accumulation in organisms is not to be expected.

### Additional advice

Do not release untreated (biological treatment plants) into natural waters.

## 13. Disposal considerations

Not dried out residues must be disposed of by special means, e.g. suitable incineration, in accordance with local regulations.

### Waste code no.

08 04 09

### Kind of waste

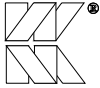
Adhesives and sealing compounds containing organic solvents or other hazardous substances.

### Contaminated packaging:

Contaminated packaging should be optimally emptied; they can then be passed on for recycling after being thoroughly cleaned.

## 14. Transport Information

				Transport by Land Navigation ADR/RID	Transport by Airfreight ICAO/IATA			Transport by Ocean Freight IMDG / GGVSee	
Preparation:	UN-Number:	Class:	Packing Group:	Proper Shipping Name:	Proper Shipping Name	Packing Instructions (Passenger)	Packing Instructions (Cargo)	Proper Shipping Name	EmS-Number
Group I Group II	1133	3	II	Klebstoffe (enthält Tetrahydrofuran, Dampfdruck bei 50°C höchstens 110 kPa)	Adhesives containing flammable liquid	305	307	ADHESIVES, containing a flammable Liquid	F-E S-D
Group III	2056	3	II	Tetrahydrofuran	Tetrahydro- furan	305	307	TETRAHY- DROFURAN	F-E S-D



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## | 15. Regulatory information

### Regulations of the European union (Labelling) / National legislation/Regulations

Tetrahydrofuran: EC-Number 203-726-8, Index-Number 603-205-00-0

Hazard symbol(s)

F Highly flammable.

Xi Irritant.

R-phrases(s)

R11 Highly flammable.

R19 May form explosive peroxides.

R36/37 Irritating to eyes and respiratory system.

S-phrases(s)

S 2 Keep out of the reach of children.

S16 Keep away from sources of ignition – No smoking.

S29 Do not empty into drains.

S33 Take precautionary measures against static discharges.

### National legislation / regulations

**TA Luft (Deutschland):** 5.2.5. organic gas, general regulation

**Water hazard class (Germany):** WGK 1 slightly water endangering

## 16. Other Information

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. The data do not describe the product's properties (product specification). Neither should any agreed property nor the suitability of the product for any specific purpose be deduced from the data contained in the safety data sheet. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and that the legislation is observed.

| Vertical lines at the left margin show the modifications done since the last version.