



Printing date 14.09.2005

Reviewed on 14.09.2005

**1 Identification of the substance/preparation and of the company/undertaking**

- **Trade name:** MR® 68 NF Penetrant red and fluorescent
- **Type of packaging** Aerosol
- **Application of the substance / the preparation**  
Testing material for nondestructive surface crack detection
- **Manufacturer/Supplier:**  
MR-Chemie GmbH  
Nordstr. 61-63  
D-59427 Unna  
Germany  
Tel. +49 (0)2303/95151-0  
Fax +49 (0)2303/95151-10
- **Further information obtainable from:** Laboratory, Mrs. Rösner, Tel.: 0049/2303/95151-18
- **Information in case of emergency:**  
Giftinformationszentrum Nord  
Robert-Koch-Straße 40  
37075 Göttingen  
Germany  
Tel.: 0049/(0)551/19240

**2 Composition/information on ingredients**

- **Chemical characterization:**  
Mixture of glycoethers, surfactants, additives and dye-stuffs (free from azo-dyes)
- **Chemical characterization**

**Dangerous components:**

CAS: 112-34-5 EINECS: 203-961-6	2-(2-butoxyethoxy)ethanol	Xi; R 36	25-50%
	dye-stuff (xanthene)	Xn; R 22-52/53	1-5%
CAS: 74-98-6 EINECS: 200-827-9	propane	F+; R 12	10-25%
CAS: 106-97-8 EINECS: 203-448-7	butane	F+; R 12	10-25%

- **Propellant:** Propane-Butane
- **Additional information:** For the wording of the listed risk phrases refer to section 16.

**3 Hazards identification****Hazard description:**Xi Irritant  
F+ Extremely flammable**Information concerning particular hazards for human and environment:**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

Warning! Pressurized container.  
R 12 Extremely flammable.  
R 36 Irritating to eyes.  
Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C.  
Do not pierce or burn, even after use.  
Do not spray on a naked flame or any incandescent material. Keep away from sources of ignition - No smoking.  
Buildup of explosive mixtures possible without sufficient ventilation.  
Keep out of the reach of children

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**Classification system:**

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

**4 First-aid measures**

- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**  
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Not relevantly - aerosol can.
- **Information for doctor:**  
Grease with skin-cream to restore fat film in order to prevent skin inflammation.

**5 Fire-fighting measures**

- **Suitable extinguishing agents:**  
CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards caused by the substance, its products of combustion or resulting gases:**  
Formation of toxic gases is possible in the case of fire.  
In case of fire, the following can be released:  
Carbon monoxide (CO)
- **Protective equipment:** Wear self-contained respiratory protective device.

**6 Accidental release measures**

- **Person-related safety precautions:**  
Keep away from ignition sources.  
Avoid contact with eyes and skin.  
Wear protective equipment. Keep unprotected persons away.
- **Measures for environmental protection:** Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:**  
Ensure adequate ventilation.  
Dispose of the material collected according to regulations.
- **Additional information:** See Section 7 for information on safe handling.

**7 Handling and storage**

- **Handling:**
- **Information for safe handling:**  
Avoid contact with skin and eyes.  
Ensure good ventilation/exhaustion at the workplace.
- **Information about fire - and explosion protection:**  
Fumes can combine with air to form an explosive mixture.  
Do not spray onto a naked flame or any incandescent material.  
Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.  
Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C, e.g. electric lights. Do not pierce or burn, even after use.
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**  
Store in a cool location.  
Observe official regulations on storing packagings with pressurized containers.

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- **Information about storage in one common storage facility:**  
Store away from foodstuffs.  
Keep away from strong oxidizing agents, alkalis and acids.
- **Further information about storage conditions:** Protect from heat and direct sunlight.

### 8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.

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

#### 112-34-5 2-(2-butoxyethoxy)ethanol

MAK (Germany)	Long-term value: 100 mg/m <sup>3</sup>
MAK (TRGS 900) (Germany)	Schwangerschaft Gruppe C Long-term value: 100 mg/m <sup>3</sup> Y; DFG

#### 74-98-6 propane

OES (Great Britain)	Asphyxiant
MAK (Germany)	Long-term value: 1800 mg/m <sup>3</sup> , 1000 ppm
MAK (TRGS 900) (Germany)	Long-term value: 1800 mg/m <sup>3</sup> , 1000 ppm DFG

#### 106-97-8 butane

OES (Great Britain)	Short-term value: 1810 mg/m <sup>3</sup> , 750 ppm Long-term value: 1450 mg/m <sup>3</sup> , 600 ppm
MAK (Germany)	Long-term value: 2400 mg/m <sup>3</sup> , 1000 ppm
MAK (TRGS 900) (Germany)	Long-term value: 2400 mg/m <sup>3</sup> , 1000 ppm DFG

#### glycole ether

MAK (Germany)	Long-term value: 660, 100
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#### 102-71-6 2,2',2''-nitrilotriethanol

MAK (Germany)	vgl. Abschn. IV
MAK (TRGS 900) (Germany)	Long-term value: 5 E mg/m <sup>3</sup> S

- **Additional information:** The lists valid during the making were used as basis.
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing  
Wash hands before breaks and at the end of work.  
Do not inhale gases / fumes / aerosols.  
Avoid contact with the eyes and skin.
- **Respiratory protection:**  
filter A  
Use suitable respiratory protective device in case of insufficient ventilation.
- **Protection of hands:**  
Protective gloves  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Material of gloves**  
PVC gloves  
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has

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therefore to be checked prior to the application.

· **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:** Tightly sealed goggles· **Body protection:** Protective work clothing**9 Physical and chemical properties**· **General Information**

<b>Form:</b>	Aerosol
<b>Colour:</b>	Red
<b>Odour:</b>	Characteristic

· **Change in condition**

<b>Melting point/Melting range:</b>	Undetermined.
<b>Boiling point/Boiling range:</b>	Not applicable, as aerosol.

<b>Flash point:</b>	-97°C
	Basis: propellant

<b>Ignition temperature:</b>	Not determined - aerosol.
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<b>Self-igniting:</b>	Product is not selfigniting.
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<b>Danger of explosion:</b>	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
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· **Explosion limits:**

<b>Lower:</b>	0.9 Vol %
<b>Upper:</b>	10.9 Vol %

<b>Vapour pressure at 20°C:</b>	8300 hPa
	Basis: propellant

<b>Spray can internal pressure (20 °C):</b>	4,5 bar
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<b>Spray can internal pressure (50 °C):</b>	8,5 bar
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<b>Density:</b>	Not determined.
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<b>Solubility in / Miscibility with water:</b>	Emulsifiable.
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**10 Stability and reactivity**· **Thermal decomposition / conditions to be avoided:**

Danger of bursting of the aerosol can during overheating

· **Materials to be avoided:** Strong oxidizing agents, alkalis and acids.· **Dangerous reactions** No dangerous reactions known.· **Dangerous decomposition products:** At fire temperatures may give off toxic fumes.**11 Toxicological information**· **Acute toxicity:**· **Primary irritant effect:**· **on the skin:** Low, no classification· **on the eye:** Irritating effect.· **Sensitization:** No sensitizing effects known.

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· **Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:  
Irritant

**12 Ecological information**

· **Information about elimination (persistence and degradability):**

The biodegradability of the aqueous solution (1 %) amounts to 96 %.

· **General notes:**

Water hazard class 1 (Self-assessment): weakly water-endangering

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

**13 Disposal considerations**

· **Product:**

· **Recommendation**

After arrangement with the local water authority the product in aqueous dilution (washing water) can to be introduced into drains, as far as it was not continued to contaminate by the user.

The wash water is 96 % biodegradable if it contains max. 1 % of the pure product.

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

· **Waste disposal key:**

For this product no waste key number can be specified, because only the intended purpose permits an allocation. The waste key number is to be specified in arrangement with the regional waste disposal.

· **European waste catalogue**

07 07 04	other organic solvents, washing liquids and mother liquors
15 01 10	packaging containing residues of or contaminated by dangerous substances

· **Uncleaned packaging:**

· **Recommendation:** Disposal must be made according to official regulations.

· **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

**14 Transport information**

· **Land transport ADR/RID (cross-border)**



· **ADR/RID class:** 2 5F Gases.

· **Danger code (Kemler):** 23  
Is void.

· **UN-Number:** 1950

· **Packaging group:** -

· **Hazard label** 2.1

· **Description of goods:** 1950 AEROSOLS

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**· Maritime transport IMDG:**

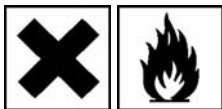
- **IMDG Class:** 2.1
- **UN Number:** 1950
- **Label** 2.1
- **Packaging group:** -
- **EMS Number:** F-D,S-U
- **Marine pollutant:** No
- **Proper shipping name:** AEROSOLS

**· Air transport ICAO-TI and IATA-DGR:**

- **ICAO/IATA Class:** 2.1
- **UN/ID Number:** 1950
- **Label** 2.1
- **Packaging group:** -
- **Proper shipping name:** AEROSOLS, flammable

**15 Regulatory information****· Labelling according to EU guidelines:**

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.

**· Code letter and hazard designation of product:**

Xi Irritant  
F+ Extremely flammable

**· Risk phrases:**

12 Extremely flammable.  
36 Irritating to eyes.

**· Safety phrases:**

16 Keep away from sources of ignition - No smoking.  
23 Do not breathe aerosol.  
24 Avoid contact with skin.  
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
51 Use only in well-ventilated areas.  
60 This material and its container must be disposed of as hazardous waste.

**· Special labelling of certain preparations:**

Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C.  
Do not pierce or burn, even after use.  
Do not spray on a naked flame or any incandescent material. Keep away from sources of ignition - No smoking.  
Buildup of explosive mixtures possible without sufficient ventilation.  
Keep out of the reach of children

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- **National regulations:**
- **Technical instructions (air):**

Class	Share in %
II	25-50
III	25-50
NK	2,5-10

- **Waterhazard class:**  
Water hazard class 1: slightly hazardous for water.(In accordance with classification VwVwS,appendix 4)

**16 Other information**

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.

- **Relevant R-phrases**  
12 Extremely flammable.  
22 Harmful if swallowed.  
36 Irritating to eyes.  
52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- **Recommended restriction of use**  
Existing national and local laws concerning chemicals are to be considered.
- **Department issuing MSDS:** MR-Chemie GmbH, Entwicklung
- **Contact:** Laboratory, Mrs. Rösner
- \* **Data compared to the previous version altered.**