Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 02.05.2012 Revision: 02.05.2012

1 Identification of the substance/mixture and of the company/undertaking

· **Product identifier**
· **Trade name: MR® 68 H penetrant red, system "hot"**
· **Type of packaging** Aerosol
· **Relevant identified uses of the substance or mixture and uses advised against**
· **Application of the substance / the preparation**
Testing material for nondestructive surface crack detection

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Hersteller:
MR-Chemie GmbH
Nordstr. 61-63
D-59427 Unna
Tel. +49 (0)2303/95151-0
Fax +49 (0)2303/95151-10

· **Further information obtainable from:**
MR® Chemie GmbH, Developement, Tel.: 0049-(0)2303/95151-18, QS@mr-chemie.de
· **Emergency telephone number:**
24h- Emergency Contact Phone Number
For Chemical Emergency, Spill, Leak, Fire, Exposure or Accident

Call Day or Night within USA and Canada: 1 800 424 9300
Outside USA and Canada: 001 703 527 3887
(WISAG FMO Cargo Service GmbH & CO.KG)

2 Hazards identification

· **Classification of the substance or mixture**
· **Classification according to Regulation (EC) No 1272/2008**


GHS02 flame

Flam. Aerosol 1 H222 Extremely flammable aerosol.

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**


F+; Extremely flammable

R12: Extremely flammable.

R33: Danger of cumulative effects.
· **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.
· **Classification system:**
The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

· **Label elements**

· **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:**


F+ Extremely flammable

· **Risk phrases:**
12 Extremely flammable.

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33 Danger of cumulative effects.

· **Safety phrases:**
23 Do not breathe vapour/spray.
24/25 Avoid contact with skin and eyes.
33 Take precautionary measures against static discharges.
43 In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.
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.
Buildup of explosive mixtures possible without sufficient ventilation.
Keep out of the reach of children.
· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of substances listed below with nonhazardous additions.

· **Dangerous components:**		
CAS: 74-98-6 EINECS: 200-827-9	propane F+ R12 Flam. Gas 1, H220; Press. Gas, H280	10-25%
CAS: 106-97-8 EINECS: 203-448-7	butane F+ R12 Flam. Gas 1, H220; Press. Gas, H280	10-25%
CAS: 509-34-2 EINECS: 208-096-8	Solvent Red 49 Xn R22; Xi R36 R52/53 Acute Tox. 4, H302; Eye Irrit. 2, H319; Aquatic Chronic 3, H412	1-5%

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

4 First aid measures

· **Description of 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. Then consult a doctor.
· **After swallowing:** Not relevant - aerosol can.
· **Information for doctor:**
Grease with skin-cream to restore fat film in order to prevent skin inflammation.
· **Most important symptoms and effects, both acute and delayed**
No further relevant information available.

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· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Firefighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **For safety reasons unsuitable extinguishing agents:** Water with full jet
· **Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Carbon monoxide (CO)
· **Advice for firefighters**
· **Protective equipment:** Wear self-contained respiratory protective device.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Handling:**
· **Precautions for safe handling** No special precautions are necessary if used correctly.
· **Information about fire - and explosion protection:**
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.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:**
Observe official regulations on storing packagings with pressurized containers.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** Protect from heat and direct sunlight.
· **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

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

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· **Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**	
74-98-6 propane	
AGW (Germany)	Long-term value: 1800 mg/m³, 1000 ppm 4(II);DFG
106-97-8 butane	
WEL (Great Britain)	Short-term value: 1810 mg/m³, 750 ppm Long-term value: 1450 mg/m³, 600 ppm Carc (if more than 0.1% of buta-1.3-diene)
AGW (Germany)	Long-term value: 2400 mg/m³, 1000 ppm 4(II);DFG
112-80-1 Ölsäure	
MAK (Germany)	vgl.Abschn.Xc

· **Additional information:** The lists valid during the making were used as basis.

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Wash hands before breaks and at the end of work.
Do not inhale gases / fumes / aerosols.
· **Respiratory protection:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
For good ventilation provide, this can be achieved by local or space exhaust. If the concentration lies over the job limit values, then, a certified respirator suitable for this purpose must be used.
· **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**
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 therefore to be checked prior to the application.
· **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:** With danger of the eye contact closing eye protector.
· **Body protection:** Protective work clothing

9 Physical and chemical properties

· **Information on basic physical and chemical properties**
· **General Information**
· **Appearance:**

Form:	Aerosol
Colour:	According to product specification
· **Odour:**	Characteristic
· **Odour threshold:**	Not determined.

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· **pH-value:**	Not determined.
· **Change in condition**	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Not applicable, as aerosol.
· **Flash point:**	-97°C Basis: propellant
· **Flammability (solid, gaseous):**	Not applicable.
· **Ignition temperature:**	Not determined - aerosol.
· **Decomposition temperature:**	Not determined.
· **Self-igniting:**	Product is not selfigniting.
· **Danger of explosion:**	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
· **Explosion limits:**	
Lower:	1.5 Vol %
Upper:	10.9 Vol %
· **Vapour pressure at 20°C:**	8300 hPa Basis: propellant
· **Density at 20°C:**	0.835 g/cm³ Basis: active substance
· **Relative density**	Not determined.
· **Vapour density**	Not determined.
· **Evaporation rate**	Not applicable.
· **Solubility in / Miscibility with water:**	Not miscible or difficult to mix.
· **Segregation coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not determined.
Kinematic:	Not determined.
Organic solvents:	47.3 %
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity**
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:**
Danger of bursting of the aerosol can during overheating
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

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11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**
· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **Sensitization:** No sensitizing effects known.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behaviour in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Water hazard class 1: weakly water-endangering
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation**
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.

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

14 Transport information

· **UN-Number**	
· **ADR, IMDG, IATA**	UN1950
· **UN proper shipping name**	
· **ADR**	1950 AEROSOLS
· **IMDG**	AEROSOLS
· **IATA**	AEROSOLS, flammable

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· **Transport hazard class(es)**

· **ADR**

· **Class**	2 5F Gases.
· **Label**	2.1

· **IMDG, IATA**

· **Class**	2.1
· **Label**	2.1
· **Packing group**	
· **ADR, IMDG, IATA**	Void
· **Environmental hazards:**	
· **Marine pollutant:**	No
· **Special precautions for user**	Warning: Gases.
· **Danger code (Kemler):**	-
· **EMS Number:**	F-D,S-U
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **ADR**	
· **Tunnel restriction code**	D
· **UN "Model Regulation":**	UN1950, AEROSOLS, 2.1

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **National regulations:**

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

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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 phrases**
H220 Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.
H302 Harmful if swallowed.
H319 Causes serious eye irritation.

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H412 Harmful to aquatic life with long lasting effects.

R12 Extremely flammable.
R22 Harmful if swallowed.
R36 Irritating to eyes.
R52/53 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, Development
· **Contact:** MR® Chemie GmbH, Tel.: 0049(0)2303/95151-0
· **Abbreviations and acronyms:**
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 Harmonized System of Classification and Labelling of Chemicals