

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 23.11.2023

Version number 1

Revision: 23.11.2023

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

- **1.1 Product identifier**
- **Trade name: MR® 311 R AMS Penetrant red (Aerosol)**
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
- **Life cycle stages**
 - F Formulation or re-packing
 - IS Use at industrial Sites
- **Sector of Use**
 - SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
- **Product category** PC14 Metal surface treatment products
- **Process category**
 - PROC7 Industrial spraying
 - PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
 - PROC13 Treatment of articles by dipping and pouring
- **Environmental release category**
 - ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
- **Article category** AC7 Metal articles
- **Application of the substance / the mixture**
 - Testing material for nondestructive surface crack detection
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 - MR Chemie GmbH
 - Nordstr. 61-63
 - 59427 Unna (Germany)
 - Tel. +49 (0)2303 95151 0
 - Fax: +49 (0)2303 95151 10
 - post@mr-chemie.de
 - www.mr-chemie.de
- **Further information obtainable from:**
 - MR Chemie GmbH, Dep. safety data sheets, Tel.: +49/(0)2303/95151-38, QS@mr-chemie.de
- **1.4 Emergency telephone number:**
 - 24h- Emergency Contact Phone Number For Chemical Emergency, Spill, Leak, Fire, Exposure or Accident (WISAG FMO Cargo Service GmbH & CO.KG)
 - Call Day or Night within USA and Canada: 1 800 424 9300
 - Outside USA and Canada: 001 703 527 3887
 - In-Country Emergency Number for:
 - Germany: 0800-181-7059
 - China: 4001 204937 (Mandarin)
 - Hong Kong: 800 968 793 (Cantonese)
 - India: 000 800 100 7141 (Hindi)
 - South Africa: 0 800 983 611 (English)

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
 - The mixture is classified according to Regulation (EC) No 1272/2008 according to the most recent ATP.
- Aerosol 1 H222-H229 Extremely flammable aerosol. Pressurised container: May burst if heated.
- Eye Dam. 1 H318 Causes serious eye damage.
- Skin Sens. 1 H317 May cause an allergic skin reaction.
- Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.
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- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
 - The product is classified and labelled according to the GB CLP regulation.

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· Hazard pictograms



GHS02 GHS05 GHS07 GHS08

· Signal word Danger

· Hazard-determining components of labelling:

Fettalkoholalkoxylat

Hydrocarbons, C15-C20, n-alkanes, isoalkanes, cycloalkanes, <0,03% aromatics

C.I. Solvent Red 19 E

White mineral oil (petroleum)

· Hazard statements

H222-H229 Extremely flammable aerosol. Pressurised container: May burst if heated.

H318 Causes serious eye damage.

H317 May cause an allergic skin reaction.

H304 May be fatal if swallowed and enters airways.

· Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P211 Do not spray on an open flame or other ignition source.

P251 Do not pierce or burn, even after use.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves / eye protection / face protection.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

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

· Additional information:

Buildup of explosive mixtures possible without sufficient ventilation.

· 2.3 Other hazards

· Results of PBT and vPvB assessment

· PBT: Not applicable.

· vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

· 3.2 Chemical characterisation: Mixtures

· Description: Mixture of substances listed below with nonhazardous additions.

· Dangerous components:

CAS: 106-97-8 EINECS: 203-448-7 Reg.nr.: 01-2119474691-32-XXXX	butane (containing < 0,01 % butadiene (203-450-8)) Flam. Gas 1A, H220 Press. Gas (Comp.), H280	20 - 30%
CAS: 74-98-6 EINECS: 200-827-9 Reg.nr.: 01-2119486944-21-XXXX	propane Flam. Gas 1A, H220 Press. Gas (Comp.), H280	20 - 30%

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EC number: 934-956-3 Reg.nr.: 01-2119827000-58-XXXX	Hydrocarbons, C15-C20, n-alkanes, isoalkanes, cycloalkanes, <0,03% aromatics Asp. Tox. 1, H304	10 - 20%
CAS: 111190-40-0 Reg.nr.: 02-2119548491-37-XXXX	Fettalkoholalkoxylat Eye Dam. 1, H318 Aquatic Acute 1, H400 Aquatic Chronic 3, H412	10 - 20%
CAS: 8042-47-5 EINECS: 232-455-8 Reg.nr.: 01-2119487078-27-XXXX	White mineral oil (petroleum) Asp. Tox. 1, H304	10 - 20%
CAS: 68131-40-8 Reg.nr.: 01-2119560577-29-XXXX	Alcohols, C11-15-secondary, ethoxylated Aquatic Chronic 3, H412	≥ 2.5 - < 5%
CAS: 56358-09-9 EINECS: 260-124-8	C.I. Solvent Red 19 E STOT RE 2, H373 Skin Irrit. 2, H315; Skin Sens. 1, H317 Aquatic Chronic 4, H413	1 - 5%

- **Propellant:** Propane-Butane

- **Additional information:**

Wording of the listed hazard phrases are indicated in section 16 and relate to individual raw components.

SECTION 4: First aid measures

- **4.1 Description of first aid measures**

- **General information:**

Seek medical advice if symptoms occurs or in cases of doubt.

Immediately remove any clothing soiled by the product.

- **After inhalation:**

Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

- **After skin contact:**

Immediately wash with water and soap and rinse thoroughly.

Immediately rinse with water.

- **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.

- **4.2 Most important symptoms and effects, both acute and delayed**

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**

CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

- **Suitable extinguishing agents:**

CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

- **5.2 Special hazards arising from the substance or mixture**

In case of fire, the following can be released:

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Carbon monoxide (CO)

5.3 Advice for firefighters
Protective equipment: Wear self-contained respiratory protective device.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

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

6.3 Methods and material for containment and cleaning up:

Use neutralising agent.

Dispose contaminated material as waste according to section 13.

Ensure adequate ventilation.

6.4 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.

SECTION 7: Handling and storage

7.1 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.

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.

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

Store in a cool location.

Observe official regulations on storing packagings with pressurised containers.

Information about storage in one common storage facility: Not required.

Further information about storage conditions: Protect from heat and direct sunlight.

Recommended storage temperature: 5 - 45°C, 41 - 113 °F

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

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
Additional information about design of technical facilities: No further data; see section 7.

Ingredients with limit values that require monitoring at the workplace:
106-97-8 butane (containing < 0,01 % butadiene (203-450-8))

WEL (Great Britain)	Short-term value: 1810 mg/m ³ , 750 ppm
	Long-term value: 1450 mg/m ³ , 600 ppm
	Carc (if more than 0.1% of buta-1.3-diene)

AGW (Germany)	Long-term value: 2400 mg/m ³ , 1000 ppm 4(II);DFG
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74-98-6 propane

AGW (Germany)	Long-term value: 1800 mg/m ³ , 1000 ppm 4(II);DFG
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34590-94-8 Dipropylene glycol monomethyl ether

IOELV (EU)	Long-term value: 308 mg/m ³ , 50 ppm Skin
WEL (Great Britain)	Long-term value: 308 mg/m ³ , 50 ppm Sk
AGW (Germany)	Long-term value: 310 mg/m ³ , 50 ppm 1(l);DFG, EU, 11

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

· **8.2 Exposure controls**

· **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.

Avoid contact with the eyes and skin.

· **Respiratory protection:**

Filter AX-P2

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

Check the permeability prior to each renewed use of the glove.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

For the protection against chemicals in areas with heightened risk of injury (mechanical hazard) no recommendation for a suitable glove material can be given.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

Nitrile rubber, NBR

Recommended thickness of the material: ≥ 0.5 mm

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**

Supplier for suitable protection gloves:

ASD ArbeitsSicherheit Dortmund

Torstr. 101 - 37355 Niederorschel OT Rüdigershagen

Tel.: 02301 / 919543 - Fax: 02301 / 9453893

E-Mail: m.schnellhardt@t-online.de - <http://www.arbeitssicherheitdortmund.de>

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

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SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Appearance:

Form:	Aerosol
Colour:	Red
Odour:	Characteristic
Odour threshold:	Not determined.

· pH-value: Not determined.

· Change in condition

Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	Not applicable, as aerosol.

· Flash point: -80 °C
Basis: propellant

· Flammability (solid, gas): Not applicable.

· Auto-ignition temperature: Not determined - aerosol.

· Decomposition temperature: Not determined.

· Ignition temperature: Product is not selfigniting.

· Explosive properties: Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
Not determined.

· Explosion limits:

Lower:	1.1 Vol %
Upper:	14 Vol %

· Vapour pressure at 20 °C: 8,300 hPa
Basis: propellant

· Density at 20 °C: 0.85 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.

· Partition coefficient: n-octanol/water: Not determined.

· Viscosity:

Dynamic:	Not determined.
Kinematic:	Not determined.

· Solvent separation test:

Organic solvents:	50.0 %
VOC (EU)	51.40 %

· 9.2 Other information: No further relevant information available.

SECTION 10: Stability and reactivity

· 10.1 Reactivity: No further relevant information available.

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

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.
- **LD/LC50 values relevant for classification:**

106-97-8 butane (containing < 0,01 % butadiene (203-450-8))		
Inhalative	LC50/4 h	658 mg/l (rat)
68131-40-8 Alcohols, C11-15-secondary, ethoxylated		
Oral	LD50	2,600 mg/kg (rat)
- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation**
Causes serious eye damage.
- **Respiratory or skin sensitisation**
May cause an allergic skin reaction.
- **General remarks:**
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **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** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard**
May be fatal if swallowed and enters airways.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:**

68131-40-8 Alcohols, C11-15-secondary, ethoxylated	
LC50/96h	3.5 mg/l (Pimephales promelas (Fisch: Goldritzel))
- **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.
- **Additional ecological information:**
- **General notes:**
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Must not reach sewage water or drainage ditch undiluted or unneutralised.
Danger to drinking water if even small quantities leak into the ground.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

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- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Eliminate the pure, unchanged substance in accordance with local regulations.
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.
The indications for Waste key reflect the pure unmodified product and are only a recommendation.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

- | | |
|---|---------------------|
| · 14.1 UN-Number | UN1950 |
| · ADR, IMDG, IATA | |
| · 14.2 UN proper shipping name | |
| · ADR | 1950 AEROSOLS |
| · IMDG | AEROSOLS |
| · IATA | AEROSOLS, flammable |
| · 14.3 Transport hazard class(es) | |
| · ADR | |
|  | |
| · Class | 2 5F Gases. |
| · Label | 2.1 |
| | |
| · IMDG, IATA | |
|  | |
| · Class | 2.1 Gases. |
| · Label | 2.1 |
| · 14.4 Packing group | |
| · ADR, IMDG, IATA | Void |
| · 14.5 Environmental hazards: | Not applicable. |
| · 14.6 Special precautions for user | Warning: Gases. |
| · Hazard identification number (Kemler code): | - |
| · EMS Number: | F-D,S-U |

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· Stowage Code	SW1 Protected from sources of heat. SW22 For AEROSOLS with a maximum capacity of 1 litre: Category A. For AEROSOLS with a capacity above 1 litre: Category B. For WASTE AEROSOLS: Category C, Clear of living quarters.
· Segregation Code	SG69 For AEROSOLS with a maximum capacity of 1 litre: Segregation as for class 9. Stow "separated from" class 1 except for division 1.4. For AEROSOLS with a capacity above 1 litre: Segregation as for the appropriate subdivision of class 2. For WASTE AEROSOLS: Segregation as for the appropriate subdivision of class 2.
· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E0 Not permitted as Excepted Quantity
· Transport category	2
· Tunnel restriction code	D
· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E0 Not permitted as Excepted Quantity
· UN "Model Regulation":	UN 1950 AEROSOLS, 2.1

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** None of the ingredients is listed.
- **Seveso category** P3a FLAMMABLE AEROSOLS
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 150 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 500 t
- **National regulations:**
- **Waterhazard class:** Water hazard class 2 (Self-assessment): hazardous for water.
- **VOC (EU)** 436.9 g/l
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

- **Relevant phrases**
The wording of the listed risk phrases are those of the individual raw materials.
H220 Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.
H304 May be fatal if swallowed and enters airways.

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H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

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

H400 Very toxic to aquatic life.

H412 Harmful to aquatic life with long lasting effects.

H413 May cause long lasting harmful effects to aquatic life.

· **Recommended restriction of use**

Existing national and local laws concerning chemicals are to be considered.

· **Department issuing SDS:**

MR Chemie GmbH, Dep. safety data sheets, Tel.: +49/(0)2303/95151-38

· **Contact:**

MR Chemie GmbH, Dep. safety data sheets, Tel.: +49/(0)2303/95151-38, QS@mr-chemie.de

· **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

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Gas 1A: Flammable gases – Category 1A

Aerosol 1: Aerosols – Category 1

Press. Gas (Comp.): Gases under pressure – Compressed gas

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Skin Sens. 1: Skin sensitisation – Category 1

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

Asp. Tox. 1: Aspiration hazard – Category 1

Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

Aquatic Chronic 4: Hazardous to the aquatic environment - long-term aquatic hazard – Category 4

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

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