

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

- **1.1 Product identifier**
- **Trade name: DINITROL 81 SPRAY**
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture** Corrosion inhibitors
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
DINOL GmbH
Pyrmonter Str. 76
D-32676 Lügde
Tel: +49 5281 9829 80
Fax: +49 5281 9829 860
E-mail: msds@dinol.com
- **Further information obtainable from:** Research & Development
- **1.4 Emergency telephone number:**
Giftnotruf Berlin +49(0)30 30686 790 Beratung in Deutsch und Englisch.

SECTION 2: Hazards identification

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



GHS02

Flam. Aerosol 1 H222-H229 Extremely flammable aerosol. Pressurised container: May burst if heated.



GHS07

STOT SE 3 H336 May cause drowsiness or dizziness.

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

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



F+; Extremely flammable

R12: Extremely flammable.

R52/53-66-67: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Repeated exposure may cause skin dryness or cracking. Vapours may cause drowsiness and dizziness.

- **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.

At long or repeated contact with skin it may cause dermatitis due to the degreasing effect of the solvent.

Warning! Pressurised container.

Has a narcotising effect.

- **Classification system:**

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

- **2.2 Label elements**

- **Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the CLP regulation.

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· **Hazard pictograms**



GHS02 GHS07

· **Signal word** *Danger*

· **Hazard-determining components of labelling:**

Naphtha (petroleum), hydrotreated light

· **Hazard statements**

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

H336 *May cause drowsiness or dizziness.*

H412 *Harmful to aquatic life with long lasting effects.*

· **Precautionary statements**

P210 *Keep away from heat/sparks/open flames/hot surfaces. - No smoking.*

P251 *Pressurized container: Do not pierce or burn, even after use.*

P304+P340 *IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.*

P403+P233 *Store in a well-ventilated place. Keep container tightly closed.*

P405 *Store locked up.*

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:**

EUH066 Repeated exposure may cause skin dryness or cracking.

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.

· **2.3 Other hazards**

The petroleum naphtha / petroleum distillate / lubricating oil meet the requirements for not being classified as carcinogenic (<0,1% benzene alt<3% (w/w) DMSO extract (IP 346)).

· **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 additions.

· **Dangerous components:**

CAS: 64742-49-0 EC number: 927-241-2 Reg.nr.: 01-2119471843-32	<i>Naphtha (petroleum), hydrotreated light</i> Xn R65 R10-52/53-66-67 ----- Flam. Liq. 3, H226; Asp. Tox. 1, H304; STOT SE 3, H336; Aquatic Chronic 3, H412	50-<100%
CAS: 74-98-6 EINECS: 200-827-9	<i>Propane liquefied</i> F+ R12 ----- Flam. Gas 1, H220; Press. Gas C, H280	10-<25%
CAS: 106-97-8 EINECS: 203-448-7	<i>Butane, pure</i> F+ R12 ----- Flam. Gas 1, H220; Press. Gas C, H280	10-<25%

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

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SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **After inhalation:** Supply fresh air or oxygen; call for doctor.
- **After skin contact:** If skin irritation continues, consult a doctor.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Do not induce vomiting; call for medical help immediately.
- **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**
- **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
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:**
Do not inhale explosion gases or combustion gases.
Mount respiratory protective device.
- **Additional information** Cool endangered receptacles with water spray.

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:**
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Absorb liquid components with liquid-binding material.
- **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**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Use only in well ventilated areas.
- **Information about fire - and explosion protection:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
Pressurised container: protect from sunlight and do not expose to temperatures exceeding 50 °C, i.e. electric lights. Do not pierce or burn, even after use.

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- **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:**
Keep container tightly sealed.
Do not seal receptacle gas tight.
Store in cool, dry conditions in well sealed receptacles.
Protect from heat and direct sunlight.
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

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

· **8.1 Control parameters**

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

106-97-8 Butane, pure

WEL	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)

· **DNELs**

64742-49-0 Naphtha (petroleum), hydrotreated light

Oral	Long-term - systemic effects, general population	300 mg/kg bw/day (General Population)
Dermal	Long-term - systemic effects, general population	300 mg/kg bw/day (General population)
	Long-term - systemic effects, worker	300 mg/kg bw/day (Worker)
Inhalative	Long-term - systemic effects, general population	900 mg/m ³ (General Population)
	Long-term - systemic effects, worker	1500 mg/m ³ (Worker)

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

· **8.2 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:**
Short term filter device:



Filter AX

- **Protection of hands:**



Protective gloves

· **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.

Nitrile rubber

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- Recommended thickness of the material: $\geq 0,12$ mm
- **Penetration time of glove material**
> 480 min.
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**



Tightly sealed goggles

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

- **Form:** Aerosol
- **Colour:** Whitish
- **Odour:** Characteristic
- **Odour threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

- **Melting point/Melting range:** Undetermined.
- **Boiling point/Boiling range:** -44 °C

· **Flash point:** < -20 °C (DIN 53213)

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:** > 200 °C

· **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:** 0.6 Vol %
- **Upper:** 10.9 Vol %

· **Vapour pressure At 20 °C:** 4500 hPa

· **Density At 20 °C:** 0.704 g/cm³ (DIN 51757)

· **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 content:**

· **Organic solvents:** 92.1 %

· **Solids content:** 7.9 % (DIN 53216)

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· 9.2 Other information	No further relevant information available.
· VOC (EU):	92.09 %
· VOC (EU):	648.3 g/l
· VOCV:	92.09 %

SECTION 10: Stability and reactivity

- **10.1 Reactivity**
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **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:** Carbon monoxide

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:**

· **LD/LC50 values relevant for classification:**

ATE (Acute Toxicity Estimates)

Inhalative	LC50/4 h	3181 mg/l
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64742-49-0 Naphtha (petroleum), hydrotreated light

Oral	LD50	>5000 mg/kg (RAT)
Dermal	LD50	>5000 mg/kg (RABBIT)
Inhalative	LC50/4 h	4951 mg/l (RAT)

106-97-8 Butane, pure

Inhalative	LC50/4 h	658 mg/l (rat)
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- **Primary irritant effect:**
- **on the skin:** Prolonged or repeated contact with skin may cause slight irritation and/or reddening.
- **on the eye:** No irritating effect.
- **Sensitisation:** Sensitising effect by skin contact is possible by prolonged exposure.
- **Additional toxicological information:** No further relevant information available.
- **Ingestion:** Risk of chemical pneumonia if the product reaches the lungs at vomiting or similar.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **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.
- **Ecotoxicological effects:**
- **Remark:** Harmful to fish
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Harmful to aquatic organisms
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.

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- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
Dispose of as dangerous waste.

· **European waste catalogue**

16 00 00	WASTES NOT OTHERWISE SPECIFIED IN THE LIST
16 05 00	gases in pressure containers and discarded chemicals
16 05 04*	gases in pressure containers (including halons) containing dangerous substances

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

SECTION 14: Transport information

- **14.1 UN-Number**
- **ADR, IMDG, IATA** UN1950

- **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
- **Label** 2.1

- **14.4 Packing group**
- **ADR, IMDG, IATA** Void

- **14.5 Environmental hazards:**
- **Marine pollutant:** No

- **14.6 Special precautions for user** Warning: Gases.
- **Danger code (Kemler):** -
- **EMS Number:** F-D,S-U

- **14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

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· 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":** UN1950, AEROSOLS, 2.1

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



GHS02 GHS07

· **Signal word** Danger

· Hazard-determining components of labelling:

Naphtha (petroleum), hydrotreated light

· Hazard statements

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

H336 May cause drowsiness or dizziness.

H412 Harmful to aquatic life with long lasting effects.

· Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P251 Pressurized container: Do not pierce or burn, even after use.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

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.

· National regulations:

· Technical instructions (air):

Class	Share in %
NK	92.1

· **Waterhazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

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

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SECTION 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.*
- H226 *Flammable liquid and vapour.*
- H280 *Contains gas under pressure; may explode if heated.*
- H304 *May be fatal if swallowed and enters airways.*
- H336 *May cause drowsiness or dizziness.*
- H412 *Harmful to aquatic life with long lasting effects.*

- R10 *Flammable.*
- R12 *Extremely flammable.*
- R52/53 *Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.*
- R65 *Harmful: may cause lung damage if swallowed.*
- R66 *Repeated exposure may cause skin dryness or cracking.*
- R67 *Vapours may cause drowsiness and dizziness.*

· Department issuing MSDS: Research & Development

· Contact: Kontakt: msds@dinol.com oder Tel.: 0049 (0)5281 982 980

· Abbreviations and acronyms:

- RID: *Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)*
- IATA-DGR: *Dangerous Goods Regulations by the "International Air Transport Association" (IATA)*
- ICAO: *International Civil Aviation Organisation*
- ICAO-TI: *Technical Instructions by the "International Civil Aviation Organisation" (ICAO)*
- 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 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)*
- DNEL: *Derived No-Effect Level (REACH)*
- LC50: *Lethal concentration, 50 percent*
- LD50: *Lethal dose, 50 percent*
- Flam. Gas 1: *Flammable gases, Hazard Category 1*
- Flam. Aerosol 1: *Flammable aerosols, Hazard Category 1*
- Press. Gas C: *Gases under pressure: Compressed gas*
- Flam. Liq. 3: *Flammable liquids, Hazard Category 3*
- STOT SE 3: *Specific target organ toxicity - Single exposure, Hazard Category 3*
- Asp. Tox. 1: *Aspiration hazard, Hazard Category 1*
- Aquatic Chronic 3: *Hazardous to the aquatic environment - Chronic Hazard, Category 3*