



Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

OPN-Copper Spray

Version number: 4.0
Revision: 10.10.2019

Date of compilation: 11.06.2015

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

1.1 Product identifier

Trade name **OPN-Copper Spray**

Other means of identification

Article number 63210
Tariff No. 32081010

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses industrial use
professional use
Sector of use Coating
Uses advised against consumer use (private households)
Do not use for products that are intended for contact with food - exclude food contact.

1.3 Details of the supplier of the safety data sheet

OPN-CHEMIE OTTO PETRI GMBH

In der Au 14

D-57290 Neunkirchen/Germany

Tel.: +49 (0) 2735 / 7725-0

E-Mail: info@opn-chemie.de

Fax: +49 (0) 2735 / 7725-90

Web: www.opn-chemie.de

Further information obtainable from:

Safety data sheets Mrs. Barbara Angelika Gros-Petri

Tel.: +49 (0) 2735 / 7725-20

E-Mail: baerbel.petri@opn-chemie.de

1.4 24 hours Emergency telephone number:

Vergiftungs-Informations-Zentrale Freiburg +49 (0) 761 / 192 40

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Section	Hazard class	Hazard class and category	Hazard statement
2.3	Aerosols	Aerosol 1	H222,H229
3.3	Serious eye damage/eye irritation	Eye Irrit. 2	H319
3.8R	Specific target organ toxicity - single exposure (respiratory tract irritation)	STOT SE 3	H335
3.8D	Specific target organ toxicity - single exposure (narcotic effects, drowsiness)	STOT SE 3	H336
4.1C	Hazardous to the aquatic environment - chronic hazard	Aquatic Chronic 2	H411

Code	Supplemental hazard information
EUH066	Repeated exposure may cause skin dryness or cracking

Remarks

For full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

Spillage and fire water can cause pollution of watercourses.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Signal word Danger

Pictograms

GHS02, GHS07, GHS09



Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

OPN-Copper Spray

Version number: 4.0
Revision: 10.10.2019

Date of compilation: 11.06.2015

Hazard statements

H222 Extremely flammable aerosol.
H229 Pressurised container: May burst if heated.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
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.
P260 Do not breathe vapours/spray.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/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.
P312 Call a POISON CENTER/doctor if you feel unwell.
P337+P313 If eye irritation persists: Get medical advice/attention.
P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.
P501 Dispose of contents / container in accordance with national regulations of the disposal.

Additional labelling requirements

EUH066 Repeated exposure may cause skin dryness or cracking.

Buildup of explosive mixtures possible without sufficient ventilation.

Hazardous ingredients for labelling

Ethyl acetate, Hydrocarbons, C9, aromatics

2.3 Other hazards

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

SECTION 3: Composition/information on ingredients




3.1 Substances

Not relevant (mixture).

3.2 Mixtures

Description of the mixture

Mixture of substances listed below with nonhazardous additions

Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms
Butane	CAS No 106-97-8 EC No 203-448-7 Index No 601-004-00-0 REACH Reg. No 01-2119474691-32- xxxx	25 - < 50	Flam. Gas 1 / H220 Press. Gas L / H280	
Ethyl acetate	CAS No 141-78-6 EC No 205-500-4 REACH Reg. No 01-2119475103-46- xxxx	25 - < 50	Flam. Liq. 2 / H225 Eye Irrit. 2 / H319 STOT SE 3 / H336	
Propane	CAS No 74-98-6 EC No 200-827-9 REACH Reg. No 01-2119486944-21- xxxx	10 - < 25	Flam. Gas 1 / H220 Press. Gas L / H280	




Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

OPN-Copper Spray

Version number: 4.0
Revision: 10.10.2019

Date of compilation: 11.06.2015

Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms
Hydrocarbons, C9, aromatics	EC No 918-668-5 REACH Reg. No 01-2119455851-35- xxxx	5 - < 10	Flam. Liq. 3 / H226 STOT SE 3 / H335 STOT SE 3 / H336 Asp. Tox. 1 / H304 Aquatic Chronic 2 / H411	
Copper	CAS No 7440-50-8 EC No 231-159-6 REACH Reg. No 01-2119480154-42- xxxx	1 - < 5	Acute Tox. 4 / H302 Eye Irrit. 2 / H319 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410	
Isobutane	CAS No 75-28-5 EC No 200-857-2 REACH Reg. No 01-2119485395-27- xxxx	1 - < 5	Flam. Gas 1 / H220 Press. Gas L / H280	

3.3 Remarks

For full text of abbreviations: see SECTION 16

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. In case of respiratory tract irritation, consult a physician. Provide fresh air.

Following skin contact

Wash with plenty of soap and water.

Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Narcotic effects.

4.3 Indication of any immediate medical attention and special treatment needed

none

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

OPN-Copper Spray

Version number: 4.0
Revision: 10.10.2019

Date of compilation: 11.06.2015

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water spray. BC-powder.

Unsuitable extinguishing media

Water jet.

5.2 Special hazards arising from the substance or mixture

In case of insufficient ventilation and/or in use, may form flammable/explosive vapour-air mixture.

Hazardous combustion products

Carbon monoxide (CO). Carbon dioxide (CO₂).

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations

Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Use only in well-ventilated areas.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Managing of associated risks

Storage class (LGK)

2 B

• Flammability hazards

Do not spray on an open flame or other ignition source. Protect from sunlight.

Consideration of other advice

• Packaging compatibilities

Only packagings which are approved (e.g. acc. to ADR) may be used.

7.3 Specific end use(s)

No further relevant information available.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

OPN-Copper Spray

Version number: 4.0
Revision: 10.10.2019

Date of compilation: 11.06.2015

SECTION 8: Exposure controls/personal protection

8.1 Control parameters National limit values

Occupational exposure limit values (Workplace Exposure Limits)								
Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m ³]	STEL [ppm]	STEL [mg/m ³]	Source
DE	Butane	106-97-8	AGW	1.000	2.400	4.000	9.600	TRGS 900
DE	Ethyl acetate	141-78-6	MAK	200	750	400	1.500	DFG
DE	Ethyl acetate	141-78-6	AGW	200	730	400	1.460	TRGS 900
DE	Propane	74-98-6	AGW	1.000	1.800	4.000	7.200	TRGS 900
DE	Copper	7440-50-8	MAK		0,01		0,02	DFG
DE	Isobutane	75-28-5	AGW	1.000	2.400	4.000	9.600	TRGS 900
EU	Ethyl acetate	141-78-6	IOELV	200	734	400	1.468	2017/164/EU

Notation

STEL Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

Relevant DNELs/DMELs/PNECs and other threshold levels

Relevant DNELs of components of the mixture

Relevant DNELs of components of the mixture						
Name of substance	CAS No	Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
Hydrocarbons, C9, aromatics		DNEL	150 mg/m ³	Human, inhalatory	Worker (industry)	Chronic - systemic effects
Hydrocarbons, C9, aromatics		DNEL	25 mg/kg bw/day	Human, dermal	Worker (industry)	Chronic - systemic effects
Copper	7440-50-8	DNEL	20 mg/m ³	Human, inhalatory	Worker (industry)	Acute - systemic effects
Copper	7440-50-8	DNEL	137 mg/kg bw/day	Human, dermal	Worker (industry)	Chronic - systemic effects
Copper	7440-50-8	DNEL	273 mg/kg bw/day	Human, dermal	Worker (industry)	Acute - systemic effects

Relevant PNECs of components of the mixture

Relevant PNECs of components of the mixture						
Name of substance	CAS No	Endpoint	Threshold level	Organism	Environmental compartment	Exposure time
Ethyl acetate	141-78-6	PNEC	650 mg/l	Microorganisms	Sewage treatment plant (STP)	Short-term (single instance)
Ethyl acetate	141-78-6	PNEC	1,65 mg/l	Aquatic organisms	Water	Intermittent release

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

OPN-Copper Spray

Version number: 4.0
Revision: 10.10.2019

Date of compilation: 11.06.2015

Relevant PNECs of components of the mixture						
Name of substance	CAS No	End-point	Threshold level	Organism	Environmental compartment	Exposure time
Copper	7440-50-8	PNEC	7,8 µg/l	Aquatic organisms	Freshwater	Short-term (single instance)
Copper	7440-50-8	PNEC	5,2 µg/l	Aquatic organisms	Marine water	Short-term (single instance)
Copper	7440-50-8	PNEC	230 µg/l	Aquatic organisms	Sewage treatment plant (STP)	Short-term (single instance)
Copper	7440-50-8	PNEC	87 mg/kg	Aquatic organisms	Freshwater sediment	Short-term (single instance)
Copper	7440-50-8	PNEC	676 mg/kg	Aquatic organisms	Marine sediment	Short-term (single instance)
Copper	7440-50-8	PNEC	65 mg/kg	Terrestrial organisms	Soil	Short-term (single instance)

8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Do not spray in eyes. If required use tight-fitting goggles.

Skin protection

Hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374.

Type of material

NBR: acrylonitrile-butadiene rubber.

Material thickness

> 0,7 mm

Other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory protection

Operate if possible out of doors or in a well-ventilated place. In case of inadequate ventilation wear respiratory protection. Type: A-P2 (combined filters against particles and organic gases and vapours, colour code: Brown/White).

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state

Aerosol (Spray aerosol)

Colour

Copper

Odour

Solvent like

Other safety parameters

Initial boiling point and boiling range

Not applicable, as aerosol.*

Flash point

Not applicable, as aerosol.*

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

OPN-Copper Spray

Version number: 4.0
Revision: 10.10.2019

Date of compilation: 11.06.2015

Flammability (solid, gas)	Flammable aerosol in accordance with GHS criteria
Explosive limits	
• Lower explosion limit (LEL)	2,2 vol%
• Upper explosion limit (UEL)	15 vol%
Vapour pressure	3,8 bar at 20 °C
	6,8 bar at 50 °C
Density	0,7 g/cm ³ at 20 °C
Water solubility	Insoluble
Auto-ignition temperature	287 °C
Viscosity	Not relevant (Aerosol)

9.2 Other information

* The finished mixture in an aerosol container is formed after addition of propellant. Several details are not measurable in an hermetic closed, pressurized container.

SECTION 10: Stability and reactivity

10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials". The mixture contains reactive substance(s). Risk of ignition.

10.2 Chemical stability

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

Do not spray on an open flame or other ignition source. Keep away from heat.

Hints to prevent fire or explosion

Protect from sunlight.

Physical stresses which might result in a hazardous situation and have to be avoided

High temperatures.

10.5 Incompatible materials

Oxidisers.

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Test data are not available for the complete mixture.

Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity

Shall not be classified as acutely toxic.

Acute toxicity estimate (ATE) of components of the mixture

Name of substance	CAS No	Exposure route	ATE
Copper	7440-50-8	Oral	500 mg/kg

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Causes serious eye irritation.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

OPN-Copper Spray

Version number: 4.0
Revision: 10.10.2019

Date of compilation: 11.06.2015

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

• Specific target organ toxicity - single exposure

May cause respiratory irritation. May cause drowsiness or dizziness.

• Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

Other information

Repeated exposure may cause skin dryness or cracking.

SECTION 12: Ecological information

12.1 Toxicity

Toxic to aquatic life with long lasting effects.

Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (Ordinance on facilities for handling substances hazardous to water) (AwSV): WGK (Germany) 3, highly hazardous to water

Aquatic toxicity (chronic) of components of the mixture					
Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Ethyl acetate	141-78-6	EC50	2.306 mg/l	Aquatic invertebrates	24 h
Hydrocarbons, C9, aromatics		EL50	4,1 mg/l	Aquatic invertebrates	24 h
Hydrocarbons, C9, aromatics		EC50	>99 mg/l	Microorganisms	10 min

12.2 Persistence and degradability

Degradability of components of the mixture						
Name of substance	CAS No	Process	Degradation rate	Time	Method	Source
Ethyl acetate	141-78-6	Oxygen depletion	62 %	5 d		
Hydrocarbons, C9, aromatics		Oxygen depletion	30,9 %	2 d		ECHA

12.3 Bioaccumulative potential

Bioaccumulative potential of components of the mixture				
Name of substance	CAS No	BCF	Log KOW	BOD5/COD
Butane	106-97-8		1,09 (pH value: 7, 20 °C)	
Ethyl acetate	141-78-6	30	0,68 (pH value: 7, 25 °C)	
Propane	74-98-6		1,09 (pH value: 7, 20 °C)	
Isobutane	75-28-5		1,09 (pH value: 7, 20 °C)	

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

OPN-Copper Spray

Version number: 4.0
Revision: 10.10.2019

Date of compilation: 11.06.2015

- 12.6 Other adverse effects**
Endocrine disrupting potential
None of the ingredients are listed.

SECTION 13: Disposal considerations

- 13.1 Waste treatment methods**
Sewage disposal-relevant information
Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.
- Waste treatment of containers/packagings**
It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.
- Relevant provisions relating to waste**
List of wastes
15 01 04 Metallic packaging
15 01 10 Packaging containing residues of or contaminated by dangerous substances
16 05 04 Containing hazardous gases in pressure containers (including halons)
- Remarks**
Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

SECTION 14: Transport information

- 14.1 UN number** 1950
- 14.2 UN proper shipping name** AEROSOLS
- 14.3 Transport hazard class(es)**
Class 2 (Gases) (Aerosol)
Subsidiary risk(s) 2.1 (Flammable)
- 14.4 Packing group** Not assigned to a packing group
- 14.5 Environmental hazards** Hazardous to the aquatic environment
- 14.6 Special precautions for user**
Provisions for dangerous goods (ADR) should be complied within the premises.
- 14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code**
The cargo is not intended to be carried in bulk.

Information for each of the UN Model Regulations

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)

UN number 1950
Proper shipping name AEROSOLS
Class 2
Classification code 5F
Danger label(s) 2.1
Fish and tree



Environmental hazards Yes (hazardous to the aquatic environment)
Special provisions (SP) 190, 327, 344, 625
Excepted quantities (EQ) E0
Limited quantities (LQ) 1 L
Transport category (TC) 2
Tunnel restriction code (TRC) D

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

OPN-Copper Spray

Version number: 4.0
Revision: 10.10.2019

Date of compilation: 11.06.2015

International Maritime Dangerous Goods Code (IMDG)

UN number 1950
Proper shipping name AEROSOLS
Class 2.1
Marine pollutant Yes (hazardous to the aquatic environment)
Danger label(s) 2.1
Fish and tree



Special provisions (SP) 63, 190, 277, 327, 344, 381, 959
Excepted quantities (EQ) E0
Limited quantities (LQ) 1 L
EmS F-D, S-U

Stowage category

International Civil Aviation Organization (ICAO-IATA/DGR)

UN number 1950
Proper shipping name Aerosols, flammable
Class 2.1
Environmental hazards Yes (hazardous to the aquatic environment)
Danger label(s) 2.1



Special provisions (SP) A145, A167
Excepted quantities (EQ) E0
Limited quantities (LQ) 30 kg

SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

List of substances subject to authorisation (REACH, Annex XIV)/SVHC - candidate list

none of the ingredients are listed

Directive 75/324/EEC relating to aerosol dispensers

Classification of the gas/aerosol Extremely flammable

Labelling

Pressurized container: may burst if heated. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not pierce or burn, even after use. Protect from sunlight. Do not expose to temperatures exceeding 50 °C.

Additional information

Deco-Paint Directive (2004/42/EC)

VOC content

87,14 %

609,9 g/l

The maximum content of VOC of the product in a ready to use condition

Maximum VOC content limit				
Product category	Product subcategory	Coating	Type	VOC g/l
Vehicle refinishing products	Special finishes	All types		840

Directive on industrial emissions (VOCs, 2010/75/EU)

VOC content

87,14 %

Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) - Annex II

none of the ingredients are listed

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

OPN-Copper Spray

Version number: 4.0
Revision: 10.10.2019

Date of compilation: 11.06.2015

Regulation 166/2006/EC concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

Pollutant release and transfer registers (PRTR)			
Name of substance	CAS No	Remarks	Threshold for releases to air (kg/year)
Copper	7440-50-8	(8)	100

Legend

(8) All metals shall be reported as the total mass of the element in all chemical forms present in the release

Directive 2000/60/EC establishing a framework for Community action in the field of water policy (WFD)

none of the ingredients are listed

National regulations (Germany)

Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (Ordinance on facilities for handling substances hazardous to water)(AwSV)

Water hazard class 3 (highly hazardous to water)

Technical instructions on air quality control (Germany)

Number	Group of substances	Class	Conc.	Mass flow	Mass concentration	Notation
5.2.2	Atomised inorganic substances	Class III	1 - < 5 wt%	5 g/h	1 mg/m ³	Cu
5.2.5	Organic substances		≥ 25 wt%	0,5 kg/h	50 mg/m ³	3)

Notation

3) A total mass flow of 0.50 kg/h or a total mass concentration of 50 mg/m³, each of which to be indicated as total carbon, shall not be exceeded (except organic particulate matter)
Cu Calculated as Cu (copper)

Storage of hazardous substances in non-stationary containers (TRGS 510) (Germany)

Storage class (LGK) 2 B (Aerosol dispensers and lighters)

National inventories

Country	Inventory	Status
EU	REACH Reg.	Not all ingredients are listed

Legend

REACH Reg. REACH registered substances

15.2 Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Abbreviations and acronyms

2017/164/EU	Commission Directive establishing a fourth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC, and amending Commission Directives 91/322/EEC, 2000/39/EC and 2009/161/EU.
Acute Tox.	Acute toxicity.
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways).
ADR	Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road).
AGW	Workplace exposure limit.
Aquatic Acute	Hazardous to the aquatic environment - acute hazard.
Aquatic Chronic	Hazardous to the aquatic environment - chronic hazard.
Asp. Tox.	Aspiration hazard.
ATE	Acute Toxicity Estimate.
BCF	Bioconcentration factor.
BOD	Biochemical Oxygen Demand.
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances).
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures.
COD	Chemical oxygen demand.
DFG	Deutsche Forschungsgemeinschaft MAK- und BAT-Werte-Liste, Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe, Wiley-VCH, Weinheim.
DGR	Dangerous Goods Regulations (see IATA/DGR).
DMEL	Derived Minimal Effect Level.
DNEL	Derived No-Effect Level.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

OPN-Copper Spray

Version number: 4.0
Revision: 10.10.2019

Date of compilation: 11.06.2015

EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval.
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union).
EINECS	European Inventory of Existing Commercial Chemical Substances.
EL50	Effective Loading 50 %: the EL50 corresponds to the loading rate required to produce a response in 50% of the test organisms.
ELINCS	European List of Notified Chemical Substances.
EmS	Emergency Schedule.
Eye Dam.	Seriously damaging to the eye.
Eye Irrit.	Irritant to the eye.
Flam. Gas	Flammable gas.
Flam. Liq.	Flammable liquid.
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations.
IATA	International Air Transport Association.
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA).
ICAO	International Civil Aviation Organization.
IMDG	International Maritime Dangerous Goods Code.
Index No	The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008.
IOELV	Indicative occupational exposure limit value.
LGK	Lagerklasse (storage class according to TRGS 510, Germany).
Log KOW	n-Octanol/water.
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant").
NLP	No-Longer Polymer.
PBT	Persistent, Bioaccumulative and Toxic.
PNEC	Predicted No-Effect Concentration.
Ppm	Parts per million.
Press. Gas	Gas under pressure.
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals.
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail).
STEL	Short-term exposure limit.
STOT SE	Specific target organ toxicity - single exposure.
SVHC	Substance of Very High Concern.
TRGS	Technische Regeln für Gefahrstoffe (technical rules for hazardous substances, Germany).
TRGS 900	Arbeitsplatzgrenzwerte (TRGS 900).
TWA	Time-weighted average.
VOC	Volatile Organic Compounds.
VPvB	Very Persistent and very Bioaccumulative.

Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures.

Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU.

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN).

International Maritime Dangerous Goods Code (IMDG).

Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure

Physical and chemical properties. The classification is based on tested mixture.

Health hazards. The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

List of relevant phrases (code and full text as stated in chapter 2 and 3)

H220	Extremely flammable gas.
H222	Extremely flammable aerosol.
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H229	Pressurised container: May burst if heated.
H280	Contains gas under pressure; may explode if heated.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.