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

1.1. Product identifier

Name of product

RIEGLER Zinc spray / 400 ml
Code-Nr. R3220/400 / ID-Nr. 114576

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

Recommended intended purpose(s)
Technical Aerosols

1.3. Details of the supplier of the safety data sheet

Manufacturer/distributor

RIEGLER & Co. KG
Schützenstr. 27, D-72574 Bad Urach
Phone : +49 (0) 7125/9497-0, Fax : +49 (0) 7125/9497-97
E-Mail : zedok@riegler.de
Internet : www.riegler.de

Advice

Abteilung eDocumentation
Phone : +49 (0) 7125/9497-0
Fax : +49 (0) 7125/9497-97
E-mail (competent person):
zedok@riegler.de

1.4. Emergency telephone number

Emergency advice

Giftnotrufzentrale Bonn
Phone : +49(0)228-19 240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Hazard classes and Hazard categories	Hazard Statements	Classification procedure
Aerosol 1	**H222, H229**	
Eye Irrit. 2	**H319**	
STOT SE 3	**H336**	
Aquatic Chronic 2	**H411**	

Hazard Statements

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

2.2. Label elements

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

GHS02 GHS07 GHS09

Signal word
Danger

Hazard Statements

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

Precautionary Statements

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.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash hands thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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 or doctor/physician if you feel unwell.
P337 + P313	If eye irritation persists: Get medical advice/attention.
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 to hazardous or special waste collection point.

! Hazardous ingredients for labeling
xylene

2.3. Other hazards
Product has an anesthetic effect.

Information pertaining to special dangers for human and environment
In extensive use, formation of flammable / explosive vapour-air mixture is possible.

Results of PBT and vPvB assessment
The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

! SECTION 3: Composition/ information on ingredients

3.1. Substances
not applicable

3.2. Mixtures
Description
Zinc spray based on synthetic resin binder, solvent and pigments.

Hazardous ingredients

Hazardous ingredients (continued)

CAS No	EC No	Name	[% weight]	Classification according to Regulation (EC) No 1272/2008 [CLP/GHS]
67-64-1	200-662-2	acetone	3 < 10	Flam. Liq. 2, H225 / Eye Irrit. 2, H319 / STOT SE 3, H336
71-36-3	200-751-6	butan-1-ol	1 < 3	Flam. Liq. 3, H226 / Acute Tox. 4, H302 / STOT SE 3, H335 / Skin Irrit. 2, H315 / Eye Dam. 1, H318 / STOT SE 3, H336
100-41-4	202-849-4	ethylbenzene	< 10	Flam. Liq. 2, H225 / Acute Tox. 4, H332 / STOT RE 2, H373 (hearing organs) / Asp. Tox. 1, H304
7440-66-6	231-175-3	zinc powder - zinc dust (stabilized)	2,5 < 10	Aquatic Acute 1, H400 / Aquatic Chronic 1, H410
115-10-6	204-065-8	dimethylether	50 - 70	Flam. Gas 1, H220 / Press. Gas
123-86-4	204-658-1	n-butyl acetate	< 10	Flam. Liq. 3, H226 / STOT SE 3, H336
141-78-6	205-500-4	ethyl-acetate	3 < 10	Flam. Liq. 2, H225 / Eye Irrit. 2, H319 / STOT SE 3, H336
7429-90-5	231-072-3	aluminium powder (stabilised)	< 10	
68308-64-5	269-662-8	Quaternary ammonium compounds, coco alkylethyldimethyl, Et sulfates	< 0,25	Acute Tox. 4, H302 / Skin Corr. 1B, H314 / Aquatic Acute 1, H400
64742-48-9	265-150-3	Naphtha (petroleum), hydrotreated heavy	1 < 10	Asp. Tox. 1, H304
1330-20-7	215-535-7	xylene	5 < 10	Flam. Liq. 3, H226 / STOT RE 2, H373 / Asp. Tox. 1, H304 / Acute Tox. 4, H312, H332 / Skin Irrit. 2, H315 / Eye Irrit. 2, H319 / STOT SE 3, H335

REACH

CAS No	Name	REACH registration number
67-64-1	acetone	01-2119471330-49
71-36-3	butan-1-ol	01-2119484630-38
100-41-4	ethylbenzene	01-2119489370-35
7440-66-6	zinc powder - zinc dust (stabilized)	01-2119467174-37
115-10-6	dimethylether	01-2119472128-37
123-86-4	n-butyl acetate	01-2119485493-29
141-78-6	ethyl-acetate	01-2119475103-46
7429-90-5	aluminium powder (stabilised)	01-2119529243-45
68308-64-5	Quaternary ammonium compounds, coco alkylethyldimethyl, Et sulfates	not subject to registration
64742-48-9	Naphtha (petroleum), hydrotreated heavy	01-2119457273-39
1330-20-7	xylene	01-2119488216-32

SECTION 4: First aid measures

4.1. Description of first aid measures

General information
Remove contaminated soaked clothing immediately.

In case of inhalation
Remove the casualty into fresh air and keep him immobile.
In the event of symptoms refer for medical treatment.

In case of skin contact
In case of contact with skin wash off with soap and water.
Consult a doctor if skin irritation persists.

In case of eye contact
In case of contact with eyes rinse thoroughly with plenty of water and seek medical advice.

In case of ingestion
Do not induce vomiting.
Refer to medical treatment.

4.2. Most important symptoms and effects, both acute and delayed
No information available.

4.3. Indication of any immediate medical attention and special treatment needed
No information available.

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media
Alcohol-resistant foam
Dry powder
Carbon dioxide
Dry sand

Unsuitable extinguishing media
water

5.2. Special hazards arising from the substance or mixture
Danger of bursting

5.3. Advice for firefighters
Special protective equipment for fire-fighters
Use breathing apparatus with independent air supply.
Fire-fighting operations, rescue and clearing work under effect of combustion and smoulder gases just may be done with breathing apparatus.

Additional information
Vapours are heavier than air and will spread on the ground.
Cool endangered containers with water spray jet.
Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
For non-emergency personnel
Ensure adequate ventilation.
Use personal protective clothing.
Keep away sources of ignition.
Use breathing apparatus if exposed to vapours/dust/aerosol.
Pay attention to extension of gas especially at ground (heavier than air) and in direction of the wind.

6.2. Environmental precautions
Inform pollution control authorities if product gets into the sewerage systems or open waters.
Do not discharge into the drains or bodies of water..

6.3. Methods and material for containment and cleaning up
Take up with absorbent material.
After taking up the material dispose according to regulation.

6.4. Reference to other sections
Safe handling: see section 7
Disposal: see section 13
Personal protection equipment: see section 8

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Ventilate closed rooms at ground level.
Care for thoroughly room ventilation, if necessary use in well ventilated area with local exhaust ventilation at workplace.
Take measures against electrostatically charging.

General protective measures

Avoid contact with eyes and skin
Do not inhale gases/vapours/aerosols.

Hygiene measures

At work do not eat, drink, smoke or take drugs.
Wash hands before breaks and after work.

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking
Do not spray on a naked flame or any incandescent material.
Pressurized container.
Do not pierce or burn even after use.
The product is combustible.
Vapours can form an explosive mixture with air.
Avoid effect of heat.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep in closed original container.
Adhere to administrative regulations relating to storage of compressed gas cylinders / containers.

Advice on storage compatibility

Do not store with combustible materials.

Further information on storage conditions

Protect from heat and direct solar radiation.
Storage temperature may not exceed 50°C (=122°F).
Store container at cool and aired place.
Keep in a cool place, heat causes increase in pressure and risk of bursting.

7.3. Specific end use(s)

Recommendation(s) for intended use

See section 1.2

! SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Ingredients with occupational exposure limits to be monitored

CAS No	Name	Code	[mg/m3]	[ppm]	Remark
67-64-1	Acetone	8 hours	1210	500	EH40/2005
		Short-term	3620	1500	
71-36-3	butan-1-ol	8 hours			EH40/2005
		Short-term	154	50	
115-10-6	Dimethyl ether	8 hours	766	400	EH40/2005
		Short-term	958	500	
141-78-6	Ethyl acetate	8 hours		200	EH40/2005
		Short-term		400	

Ingredients with occupational exposure limits to be monitored (continued)

CAS No	Name	Code	[mg/m3]	[ppm]	Remark
100-41-4	Ethylbenzene	8 hours	441	100	EH40/2005
		Short-term	552	125	
1330-20-7	Xylene, o-, m-, p- or mixed isomers	8 hours	220	50	EH40/2005
		Short-term	441	100	

Indicative occupational exposure limit values (91/322/EEC, 2000/39/EC, 2006/15/EC or 2009/161/EU)

CAS No	Name	Code	[mg/m3]	[ppm]	Remark
100-41-4	ethylbenzene	8 hours	442	100	skin
		Short-term	884	200	
115-10-6	dimethylether	8 hours	1920	1000	
67-64-1	acetone	8 hours	1210	500	

DNEL-/PNEC-values

DNEL worker

CAS No	Substance name	Value	Code	Remark
100-41-4	ethylbenzene	77 mg/m3	DNEL long-term inhalative (systemic)	
115-10-6	dimethylether	1894 mg/m3	DNEL long-term inhalative (systemic)	
123-86-4	n-butyl acetate	300 mg/m3	DNEL long-term inhalative (local)	
		11 mg/kg	DNEL long-term dermal (systemic)	
		600 mg/m3	DNEL acute inhalative (local)	
		960 mg/m3	DNEL acute inhalative (systemic)	
		2 mg/kg	DNEL short-term oral (acute)	
		11 mg/kg	DNEL acute dermal, short-term (systemic)	
		480 mg/m3	DNEL long-term inhalative (systemic)	
1330-20-7	xylene	289 mg/m3	DNEL acute inhalative (local)	
		180 mg/kg	DNEL long-term dermal (systemic)	
		289 mg/m3	DNEL acute inhalative (local)	
		77 mg/m3	DNEL long-term inhalative (systemic)	
		289 mg/m3	DNEL acute inhalative (systemic)	
141-78-6	ethyl-acetate	63 mg/kg	DNEL long-term dermal (systemic)	
		734 mg/m3	DNEL long-term inhalative (local)	
		1468 mg/m3	DNEL acute inhalative (systemic)	
		1468 mg/m3	DNEL acute inhalative (local)	
67-64-1	acetone	2420 mg/m3	DNEL acute inhalative (local)	
		1210 mg/m3	DNEL long-term inhalative (systemic)	
		186 mg/kg	DNEL long-term dermal (systemic)	
71-36-3	butan-1-ol	310 mg/m3	DNEL long-term inhalative (local)	
		55 mg/m3	DNEL long-term inhalative (local)	
		3,125 mg/ kg bw/day	DNEL long-term oral (repeated)	

DNEL-/PNEC-values (continued)

CAS No	Substance name	Value	Code	Remark
7440-66-6	zinc powder - zinc dust (stabilized)	5 mg/m3	DNEL long-term inhalative (systemic)	
		83 mg/kg	DNEL long-term dermal (systemic)	

PNEC

CAS No	Substance name	Value	Code	Remark
123-86-4	n-butyl acetate	0,18 mg/l	PNEC aquatic, freshwater	
		0,981 mg/kg	PNEC sediment, freshwater	
		0,018 mg/l	PNEC aquatic, marine water	
1330-20-7	xylene	0,327 mg/l	PNEC aquatic, freshwater	
		12,46 mg/kg	PNEC sediment, marine water	
		12,46 mg/kg	PNEC sediment, freshwater	
		2,31 mg/kg	PNEC sediment, freshwater	
		0,327 mg/l	PNEC aquatic, marine water	
141-78-6	ethyl-acetate	0,24 mg/l	PNEC aquatic, freshwater	
		0,115 mg/kg	PNEC sediment, marine water	
		0,024 mg/l	PNEC aquatic, marine water	
		0,34 mg/kg	PNEC sediment, freshwater	
67-64-1	acetone	10,6 mg/l	PNEC aquatic, freshwater	
		30,4 mg/kg	PNEC sediment, freshwater	
		1,06 mg/l	PNEC aquatic, marine water	
		3,04 mg/kg	PNEC sediment, marine water	
71-36-3	butan-1-ol	0,0082 mg/l	PNEC aquatic, marine water	
		0,178 mg/kg	PNEC sediment, freshwater	
		0,082 mg/l	PNEC aquatic, freshwater	
		0,0178 mg/kg	PNEC sediment, marine water	
7440-66-6	zinc powder - zinc dust (stabilized)	56,5 mg/kg	PNEC sediment, marine water	
		117,8 mg/kg	PNEC sediment, freshwater	
		0,0061 mg/l	PNEC aquatic, marine water	
		0,0206 mg/l	PNEC aquatic, freshwater	

! **Additional advice**
The statutory local and national regulations have to be observed.

8.2. Exposure controls

! **Respiratory protection**
If ventilation insufficient, wear respiratory protection.
Breathing apparatus in the event of aerosol or mist formation.
Short-term: filter apparatus, filter AX/P2, otherwise environment-independent breathing apparatus.

Hand protection
In the cases of special applications, it is recommended to check the chemical resistance with the manufacturer of the gloves.
Chemical protective gloves must be chosen carefully in view of their design and depending on the dependence on the concentration and amounts of dangerous goods used in the specific working tasks.
Glove material specification [make/type, thickness, permeation time/life, wetting resistance]: butyl rubber, 0,7mm; 480min

Eye protection
tightly fitting goggles

Other protection measures
protective clothing

Appropriate engineering controls
Care for thoroughly room ventilation, if necessary use in well ventilated area with local exhaust ventilation at workplace.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Colour	Odour
aerosol	silver-grey	solvent-like

Odour threshold
not determined

Important health, safety and environmental information

	Value	Temperature	at	Method	Remark
pH value	not determined				
boiling point	-24 °C				
Melting point / Freezing point	not determined				
Flash point	> 55 °C				
Vapourisation rate	not determined				
Flammable (solid)	not determined				
Flammability (gas)	not determined				
Ignition temperature	> 200 °C				estimate
Self ignition temperature					The product is not self-igniting.
Lower explosion limit	not determined				
Upper explosion limit	not determined				
Vapour pressure	not determined				
Relative density	0,81 g/cm3				
Vapour density	not determined				
Solubility in water					immiscible
Solubility/other	not determined				
Partition coefficient n-octanol/water (log P O/W)	not determined				

	Value	Temperature	at	Method	Remark
Decomposition temperature	not determined				
Viscosity	not determined				

Oxidising properties
No information available.

Explosive properties
The product is considered non-explosive ; nevertheless explosive vapour/air mixtures can be generated .

9.2. Other information
Vapours are heavier than air.

! SECTION 10: Stability and reactivity

10.1. Reactivity
No information available.

10.2. Chemical stability
The product is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions
no

10.4. Conditions to avoid
Keep away from heat.
Formation of explosive gas/air mixtures.

10.5. Incompatible materials
No information available.

10.6. Hazardous decomposition products

Thermal decomposition

Remark No decomposition if used as directed.

! SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity/Irritation/Sensitization

	Value/Validation	Species	Method	Remark
LD50 acute oral	> 2000 mg/kg			ATE
LD50 acute dermal	> 2000 mg/kg			ATE
LC50 acute inhalation	> 5 mg/l (4 h)		dust/mist	
Skin irritation	low irritant effect - not necessary to label			

	Value/Validation	Species	Method	Remark
Eye irritation	irritant			
Skin sensitization	non-sensitizing			

Subacute Toxicity - Carcinogenicity

	Value	Species	Method	Validation
Mutagenicity				No experimental information on genotoxicity in vitro available.
Reproduction-Toxicity				No indications of toxic effects were observed in reproduction studies in animals.
Carcinogenicity				No indications of carcinogenic effects are available from long-term trials.

! **Specific target organ toxicity (single exposure)**
May cause drowsiness or dizziness.

Experiences made from practice
Often and long skin contact may cause degreasing and desiccation of the skin which may caus skin irritation.
Product may cause irreversible eye injuries.
Inhalation causes narcotic effect/intoxication.

Additional information
The product is to be handled with the caution usual with chemicals.
Other hazardous properties may not be excluded.

! SECTION 12: Ecological information

12.1. Toxicity
No information available.

12.2. Persistence and degradability
No information available.

12.3. Bioaccumulative potential
No information available.

12.4. Mobility in soil
No information available.

12.5. Results of PBT and vPvB assessment
The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Other adverse effects
! **General regulation**
Toxic to aquatic life with long lasting effects.
Do not allow uncontrolled leakage of product into the environment.
Product is not allowed to be discharged into aquatic environment, drains or sewage treatment plants.
The ecotoxic effect of the product has not been tested. The information on this is given on the basis of details in the literature.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste code No.	Name of waste
15 01 10*	packaging containing residues of or contaminated by hazardous substances
16 05 04*	gases in pressure containers (including halons) containing hazardous substances

Wastes marked with an asterisk are considered to be hazardous waste pursuant to Directive 2008/98/EC on hazardous waste.

Recommendations for the product
Remove in accordance with local official regulations.
There are no harmonised regulations on the disposal of chemicals in the member states of the EU. In Germany the Recycling and Waste Management Act (KrWG) stipulates recycling as a requirement.

Recommendations for packaging
Dispose of according to the local waste regulations.

General information
For proper waste disposal a complete emptying of the tin is necessary.

SECTION 14: Transport information

	ADR/RID	IMDG	IATA-DGR
14.1. UN number	1950	1950	1950
14.2. UN proper shipping name	AEROSOLS	AEROSOLS (ZINC POWDER)	Aerosols, flammable
14.3. Transport hazard class(es)	2.1	2.1	2.1
14.4. Packing group	-	-	-
14.5. Environmental hazards	Yes	Yes	Yes

14.6. Special precautions for user
No information available.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
not applicable

Land and inland navigation transport ADR/RID
Hazard label(s) 2.1
tunnel restriction code D
Classification code 5F
transport in "limited quantities" according to 3.4 ADR is possible

Marine transport IMDG
MARINE POLLUTANT
Transport as limited quantities according to 3.4 IMDG Code is possible.

! SECTION 15: Regulatory information

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

VOC standard

VOC content	82,2 %
VOC value	669,5 g/L

15.2. Chemical Safety Assessment

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

SECTION 16: Other information

Recommended uses and restrictions

National and local regulations concerning chemicals shall be observed.

Further information

Each user is responsible for the implementation of the national special regulations.
The information contained herein is based on the state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.
Please observe the following disclaimer! --- Our safety data sheets have been compiled according to effective EU-directives, WITHOUT taking into account the special national directives concerning the handling of hazardous substances.

Indication of changes: "!" = Data changed compared with the previous version. Previous version: 9.1

H220	Extremely flammable gas.
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H312,	-?-
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H373	May cause damage to organs (or state all organs affected, if known) through prolonged or repeated exposure (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.