Octocure ZNO-100 (RS)

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

1.1 Product identifier

Trade name

Octocure ZNO-100 (RS)

Substance name	zinc oxide
REACH registration no.	01-2119463881-32

Identification numbers

CAS no.	1314-13-2
EC no.	215-222-5
Index no.	030-013-00-7

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

Relevant identified uses of the substance or mixture
Industrial raw material

Uses advised against
No data available.

1.3 Details of the supplier of the safety data sheet

Address
Tiarco Chemical Europe GmbH
Am Gut Baarking 12
46395 Bocholt

Telephone no.	+49 2871 23476-0
Fax no.	+49 2871 23476-44
e-mail	europeansales@trcc.com

Advice on Safety Data Sheet
sdb_info@umco.de

1.4 Emergency telephone number

For medical advice (in German and English):
+49 (0)551 192 40 (Giftinformationszentrum Nord)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification in accordance with Regulation (EC) No 1272/2008 (CLP)
Aquatic Acute 1; H400
Aquatic Chronic 1; H410

Classification information
This product is assessed and classified using the methods and criteria below referred to in Article 9 of Regulation (EC) n° 1272/2008:
Physical hazards: determined through assessment data based on the methods or standards referred to in part 2 of Annex I to CLP
Health hazards and environmental hazards: determined through toxicological and ecotoxicological assessment data based on the methods or standards referred to in Part 3 and 4 of Annex I to CLP.

2.2 Label elements

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

Product identifier
1314-13-2 (zinc oxide)

Hazard pictograms

GHS09

Signal word
Warning

Hazard statement(s)

H410	Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P273	Avoid release to the environment.
P391	Collect spillage.
P501	Dispose of contents/container to a facility in accordance with local and national regulations.

2.3 Other hazards

PBT assessment
The product is not considered to be a PBT.

vPvB assessment
The product is not considered to be a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical characterization

Substance name	zinc oxide
Formula	ZnO
Molecular weight	81.4

Identification numbers

CAS no.	1314-13-2
EC no.	215-222-5
Index no.	030-013-00-7

Components to be mentioned according to Regulation (EU) No. 1907/2006, Annex II, section 3.1

Substance name	Additional information	
CAS / EC / Index / REACH no	Concentration	%
lead-monoxide	impurity	
1317-36-8 215-267-0 082-001-00-6 -	< 0.30	wt%
cadmium oxide (non-pyrophoric)	impurity	
1306-19-0 215-146-2 048-002-00-0 -	< 0.10	wt%
zinc carbonate	impurity	
3486-35-9 222-477-6 - -	< 0.10	wt%

3.2 Mixtures

Not applicable. The product is not a mixture.

SECTION 4: First aid measures

4.1 Description of first aid measures

After inhalation
Remove affected person from the immediate area. Ensure supply of fresh air. In case of persisting adverse effects consult a physician.

After skin contact
In case of contact with skin wash off immediately with soap and water. Change contaminated, saturated clothing. Get medical attention if pain still persists.

After eye contact
Remove contact lenses. Rinse eye thoroughly under running water keeping eyelids wide open and protecting the unaffected eye (at least 10 to 15 minutes). Get medical attention if pain still persists.

After ingestion

Rinse the mouth thoroughly with water. Never give anything by mouth to an unconscious person. Do not induce vomiting. Call a doctor.

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

4.3 Indication of any immediate medical attention and special treatment needed
Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Foam; Extinguishing powder; Water spray jet; Carbon dioxide; Product itself is non-combustible; adapt fire extinguishing measures to surrounding areas.

Unsuitable extinguishing media
High power water jet

5.2 Special hazards arising from the substance or mixture
Danger of dust explosion when in powder form. In the event of fire, the following can be released: Zinc oxides

5.3 Advice for firefighters
Use self-contained breathing apparatus. Wear full protective suit. 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
Refer to protective measures listed in sections 7 and 8. Avoid dust formation.

For emergency responders
No data available. Personal protective equipment (PPE) - see Section 8.

6.2 Environmental precautions
Do not discharge into the drains/surface waters/groundwater.

6.3 Methods and material for containment and cleaning up
Collect mechanically. When collected, handle material as described under the section heading "Disposal considerations".

6.4 Reference to other sections
No data available.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling
Provide good ventilation at the work area (local exhaust ventilation, if necessary). Risks inherent to handling the product must be minimised by applying the appropriate protective and preventive measures. Working processes should - so far as possible, according to the state of the art - be designed to rule out bodily contact or the release of hazardous substances.

General protective and hygiene measures
Do not eat, drink or smoke during work time. Keep away from foodstuffs and beverages. Avoid contact with eyes and skin. Provide eye wash fountain in work area. Have emergency shower available. Wash hands before breaks and after work. Do not inhale dust.

Advice on protection against fire and explosion
Dust can form an explosive mixture with air. Avoid deposition of dust. Keep away from sources of heat and ignition. Take precautionary measures against static charges.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions
Keep container tightly closed and dry in a cool, well-ventilated place.

Requirements for storage rooms and vessels
Containers which are opened must be carefully closed and kept upright to prevent leakage. Always keep in

containers of same material as the original.

Incompatible products
Substances to be avoided, see section 10.

7.3 Specific end use(s)
No data available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values

No	Substance name	CAS no.	EC no.
1	**Dust**		
	List of approved workplace exposure limits (WELs) / EH40		
	Dust respirable		
	WEL long-term (8-hr TWA reference period)	4 mg/m³	
	Comments	see Definition 44 "Dust"	
	List of approved workplace exposure limits (WELs) / EH40		
	Dust inhalable		
	WEL long-term (8-hr TWA reference period)	10 mg/m³	
	Comments	see Definition 44 "Dust"	
2	**lead-monoxide**	**1317-36-8**	**215-267-0**
	98/24/EG		
	Inorganic lead and its compounds		
	WEL long-term (8-hr TWA reference period)	0.15 mg/m³	

DNEL, DMEL and PNEC values

DNEL values (worker)

No	Substance name			CAS / EC no	
	Route of exposure	**Exposure time**	**Effect**	**Value**	
1	**zinc oxide**			**1314-13-2 215-222-5**	
	dermal	Long term (chronic)	systemic	83	mg/kg bw/day
	inhalative	Long term (chronic)	systemic	5	mg/m³
	inhalative	Long term (chronic)	local	0.5	mg/m³

DNEL value (consumer)

No	Substance name			CAS / EC no	
	Route of exposure	**Exposure time**	**Effect**	**Value**	
1	**zinc oxide**			**1314-13-2 215-222-5**	
	oral	Long term (chronic)	systemic	0.83	mg/kg bw/day
	dermal	Long term (chronic)	systemic	83	mg/kg bw/day
	inhalative	Long term (chronic)	systemic	2.5	mg/m³

PNEC values

No	Substance name		CAS / EC no	
	ecological compartment	**Type**	**Value**	
1	**zinc oxide**		**1314-13-2 215-222-5**	
	water	fresh water	20.6	µg/L
	water	marine water	6.1	µg/L
	water	fresh water sediment	117.8	mg/kg dry weight
	water	marine water sediment	56.5	mg/kg dry weight
	soil	-	35.6	mg/kg dry weight
	sewage treatment plant	-	100	µg/L

8.2 Exposure controls

Appropriate engineering controls
Provide adequate ventilation. This should be achieved by the use of local exhaust ventilation and good general

extraction.

Personal protective equipment

Respiratory protection
If workplace exposure limits are exceeded, a respiration protection approved for this particular job must be worn. In case of dust formation, take appropriate measures for breathing protection in the event that workplace threshold values are not specified. Dust mask

Eye / face protection
Safety glasses with side protection shield (EN 166)

Hand protection
Sufficient protection is given wearing suitable protective gloves checked according to i.e. EN 374, in the event of risk of skin contact with the product. Check in any case suitability of protective glove for the specific workplace conditions (e.g. mechanical resistance, product compatibility, antistatic properties). Adhere to the manufacturer's instructions and information relating to the use, storage, care and replacement of protective gloves.

Other
Normal chemical work clothing.

Environmental exposure controls
Avoid release into sewage and environment.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

State of aggregation
solid

Form/Colour
Powder
white

Odour
odourless

Odour threshold	
Not applicable	
Source	supplier

pH value
No data available

Boiling point / boiling range	
Not relevant	
Source	supplier
Comments	Decomposes below boiling point.

Melting point/freezing point
No data available

Decomposition temperature
No data available

Flash point	
Not applicable	
Source	supplier

Ignition temperature
No data available

Auto-ignition temperature	
Not applicable	
Source	supplier

Explosive properties
Dust may form explosive mixture in air.

Flammability	
Not applicable	
Source	supplier

Lower explosion limit	
Not applicable	
Source	supplier

Upper explosion limit	
Not applicable	
Source	supplier

Vapour pressure	
Not applicable	
Source	supplier

Relative vapour density	
Not applicable	
Source	supplier

Evaporation rate	
Not applicable	
Source	supplier

Relative density
No data available

Density			
Value		5.68	g/cm³
Source	supplier		

Solubility in water			
Value		2.9	mg/L
Source	supplier		
Comments	related to: Zn		

Solubility
No data available

Partition coefficient n-octanol/water (log value)
No data available

Viscosity	
Not applicable	
Source	supplier

Particle characteristics
The D50 of ZnO is 1.05 µm, the D80 is <20 µm.

9.2 Other information

Other information
No data available.

SECTION 10: Stability and reactivity

10.1 Reactivity
No data available.

10.2 Chemical stability
Stable under recommended storage and handling conditions (See section 7).

10.3 Possibility of hazardous reactions
Dangerous reactions are not to be expected when handling product according to its intended use. Dust can form an explosive mixture with air.

10.4 Conditions to avoid
Heat, naked flames and other ignition sources. Avoid formation of dust.

10.5 Incompatible materials
Acids; Bases

10.6 Hazardous decomposition products
None if stored, handled and transported properly. In case of fire: see section 5.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute oral toxicity				
No	**Substance name**	**CAS no.**		**EC no.**
1	**zinc oxide**	**1314-13-2**		**215-222-5**
LD50	>	5000		mg/kg bodyweight
Species	rat			
Method	OECD 401			
Source	ECHA			
Evaluation/classification	Based on available data, the classification criteria are not met.			

Acute dermal toxicity				
No	**Substance name**	**CAS no.**		**EC no.**
1	**zinc oxide**	**1314-13-2**		**215-222-5**
LD50	>	2000		mg/kg bodyweight
Species	rat			
Source	OECD 402			
Evaluation/classification	Based on available data, the classification criteria are not met.			

Acute inhalational toxicity				
No	**Substance name**	**CAS no.**		**EC no.**
1	**zinc oxide**	**1314-13-2**		**215-222-5**
LC50	>	5.7		mg/l
Duration of exposure		4		h
State of aggregation	Dust			
Species	rat			
Method	OECD 403			
Source	ECHA			
Evaluation/classification	Based on available data, the classification criteria are not met.			

Skin corrosion/irritation			
No	**Substance name**	**CAS no.**	**EC no.**
1	**zinc oxide**	**1314-13-2**	**215-222-5**
Species	rabbit		
Source	ECHA		
Evaluation	non-irritant		
Evaluation/classification	Based on available data, the classification criteria are not met.		

Serious eye damage/irritation			
No	**Substance name**	**CAS no.**	**EC no.**
1	**zinc oxide**	**1314-13-2**	**215-222-5**
Species	rabbit		
Method	OECD 405		
Source	ECHA		
Evaluation	non-irritant		
Evaluation/classification	Based on available data, the classification criteria are not met.		

Respiratory or skin sensitisation			
No	**Substance name**	**CAS no.**	**EC no.**
1	**zinc oxide**	**1314-13-2**	**215-222-5**
Route of exposure	Skin		
Species	guinea pig		
Method	GPMT, EU B.6		
Source	ECHA		
Evaluation	non-sensitizing		
Evaluation/classification	Based on available data, the classification criteria are not met.		

Germ cell mutagenicity			
No	**Substance name**	**CAS no.**	**EC no.**
1	**zinc oxide**	**1314-13-2**	**215-222-5**
Type of examination	in vitro gene mutation study in bacteria		
Species	S. typhimurium TA 1535, TA 1537, TA 98 and TA 100S. typhimurium TA 1535, TA 1537, TA 98, TA 100, TA 102		
Method	OECD 471		
Source	ECHA		

Evaluation/classification	Based on available data, the classification criteria are not met.
Type of examination	In vitro Mammalian Chromosomal Aberration Test
Species	Chinese hamster V79 cells
Method	OECD 473
Source	ECHA
Evaluation/classification	Based on available data, the classification criteria are not met.
Type of examination	In vitro Mammalian Cell Micronucleus Test
Species	Human
Method	OECD 487
Source	ECHA
Evaluation/classification	Based on available data, the classification criteria are not met.
Type of examination	In vivo mammalian somatic cell study: cytogenicity / erythrocyte micronucleus
Species	rat
Method	OECD 474
Source	ECHA
Evaluation/classification	Based on available data, the classification criteria are not met.

Reproduction toxicity			
No	**Substance name**	**CAS no.**	**EC no.**
1	**zinc oxide**	**1314-13-2**	**215-222-5**

NOAEC	7.5	mg/m³
Type of examination	Prenatal Developmental Toxicity Study	
Method	OECD 414	
Source	ECHA	
Evaluation/classification	Based on available data, the classification criteria are not met.	

Carcinogenicity
No data available

STOT - single exposure
No data available

STOT - repeated exposure			
No	**Substance name**	**CAS no.**	**EC no.**
1	**zinc oxide**	**1314-13-2**	**215-222-5**

Route of exposure	inhalational	
NOAEL	1.5	mg/m³
Duration of exposure	90	day(s)
Species	rat	
Method	OECD 413	
Source	ECHA	
Evaluation/classification	Based on available data, the classification criteria are not met.	
Route of exposure	dermal	
LOAEL	75	mg/kg bw/d
Species	rat	
Method	OECD 410	
Source	ECHA	
Evaluation/classification	Based on available data, the classification criteria are not met.	
Route of exposure	oral	
Species	rat	
Source	ECHA	
Evaluation/classification	Based on available data, the classification criteria are not met.	

Aspiration hazard
No data available

11.2 Information on other hazards

Endocrine disrupting properties
No data available.

Other information
No data available.

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish (acute)			
No	**Substance name**	**CAS no.**	**EC no.**
1	**zinc oxide**	**1314-13-2**	**215-222-5**

LC50		1.55	mg/l
Duration of exposure		96	h
Species	Danio rerio		
Source	ECHA		

Toxicity to fish (chronic)
No data available

Toxicity to Daphnia (acute)			
No	**Substance name**	**CAS no.**	**EC no.**
1	**zinc oxide**	**1314-13-2**	**215-222-5**

EC50		1	mg/l
Duration of exposure		48	h
Species	Daphnia magna		
Method	OECD 202		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are met.		

Toxicity to Daphnia (chronic)
No data available

Toxicity to algae (acute)
No data available

Toxicity to algae (chronic)			
No	**Substance name**	**CAS no.**	**EC no.**
1	**zinc oxide**	**1314-13-2**	**215-222-5**

NOEC		24	µg/l
Duration of exposure		3	day(s)
Species	Pseudokirchneriella subcapitata		
Source	ECHA		

Bacteria toxicity			
No	**Substance name**	**CAS no.**	**EC no.**
1	**zinc oxide**	**1314-13-2**	**215-222-5**

EC50	>	1000	mg/l
Duration of exposure		180	min
Species	activated sludge		
Method	OECD 209		
Source	ECHA		

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

Results of PBT and vPvB assessment	
PBT assessment	The product is not considered to be a PBT.
vPvB assessment	The product is not considered to be a vPvB.

12.6 Endocrine disrupting properties

No data available.

12.7 Other adverse effects

No data available.

12.8 Other information

Other information
Do not let enter the product into drains or waterways and do not store on public depositories.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.
dispose of in accordance with local regulation.

Packaging

Residues must be removed from packaging and when emptied completely disposed of in accordance with the regulations for waste removal. Incompletely emptied packaging must be disposed of in the form of disposal specified by the regional disposer.

SECTION 14: Transport information

14.1 Transport ADR/RID/ADN

Class	9
Classification code	M7
Packing group	III
Hazard identification no.	90
UN number	UN3077
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Technical name	zinc oxide
Tunnel restriction code	-
Label	9
Environmentally hazardous substance mark	Symbol "fish and tree"

14.2 Transport IMDG

Class	9
Packing group	III
UN number	UN3077
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Technical name	zinc oxide
EmS	F-A, S-F
Label	9
Marine pollutant mark	Symbol "fish and tree"

14.3 Transport ICAO-TI / IATA

Class	9
Packing group	III
UN number	UN3077
Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Technical name	zinc oxide
Label	9
Environmentally hazardous substance mark	Symbol "fish and tree"

14.4 Other information

No data available.

14.5 Environmental hazards

Information on environmental hazards, if relevant, please see 14.1 - 14.3.

14.6 Special precautions for user

To be transported always in closed, upright and safe containers. Make sure that persons handling these containers are aware of the rules of conduct in case of incident or spillage.

14.7 Maritime transport in bulk according to IMO instruments

Not relevant

SECTION 15: Regulatory information

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

EU regulations

Regulation (EC) No 1907/2006 (REACH) Annex XIV (List of substances subject to authorisation)

In accordance with the REACH regulation (EC) 1907/2006, the product does not contain any substances that are considered as subject to listing in annex XIV, inventory of substances requiring authorisation.

REACH candidate list of substances of very high concern (SVHC) for authorisation

The substance meets the criteria in Article 57 in association with Article 59 of the REACH regulation (EC) 1907/2006 and is placed on the list of candidates considered for inclusion in annex XIV (substances subject to Authorisation).

No	Substance name	CAS no.	EC no.
1	lead-monoxide	1317-36-8	215-267-0

Regulation (EC) No 1907/2006 (REACH) Annex XVII: RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, MIXTURES AND ARTICLES

The substance is considered being subject to REACH regulation (EC) 1907/2006 annex XVII.

No	Substance name	CAS no.	EC no.	No
1	cadmium oxide (non-pyrophoric)	1306-19-0	215-146-2	75
2	lead-monoxide	1317-36-8	215-267-0	30, 63, 72, 75

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances

This product is subject to Part I of Annex I, risk category:	E1

15.2 Chemical safety assessment

A chemical safety assessment has been carried out for this substance.

SECTION 16: Other information

Sources of key data used to compile the data sheet:
Regulation (EC) No 1907/2006 (REACH), 1272/2008 (CLP) as amended in each case.
Directives 2000/39/EC, 2006/15/EC, 2009/161/EU, (EU) 2017/164.
National Threshold Limit Values of the corresponding countries as amended in each case.
Transport regulations according to ADR, RID, IMDG, IATA as amended in each case.
The data sources used to determine physical, toxic and ecotoxic data, are indicated directly in the corresponding section.

Full text of the H- and EUH- phrases drawn up in sections 2 and 3 (provided not already drawn up in these sections)
H400 Very toxic to aquatic life.

Creation of the safety data sheet
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This information is based on our present knowledge and experience.
The safety data sheet describes products with a view to safety requirements.
It does not however, constitute a guarantee for any specific product properties and shall not establish a legally valid contractual relationship.

Alterations/supplements:
Alterations to the previous edition are marked in the left-hand margin.

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