

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

### 1.1. Product identifier

Product form : Mixture  
Type of product : Thermal interface material, Fillers, putties, plasters, modelling clay, Paste

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

#### 1.2.1. Relevant identified uses

Main use category : Professional use  
Use of the substance/mixture : Thermal interface material  
Function or use category : Fillers, Conductive agents

#### 1.2.2. Uses advised against

No additional information available

### 1.3. Details of the supplier of the safety data sheet

Premier Farnell plc  
150 Armley Road, Leeds, LS12 2QQ  
+44 (0) 8701 202530

### 1.4. Emergency telephone number

+44 1865 407333

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

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

Hazardous to the aquatic environment — Acute Hazard, Category 1 H400  
Hazardous to the aquatic environment — Chronic Hazard, Category 1 H410  
Full text of H statements : see section 16

#### Adverse physicochemical, human health and environmental effects

Very toxic to aquatic life with long lasting effects. Very toxic to aquatic life.

### 2.2. Label elements

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

Extra labelling to display Extra classification(s) to display  
Hazard pictograms (CLP) :



GHS09

Signal word (CLP) : Warning  
Hazard statements (CLP) : H410 - Very toxic to aquatic life with long lasting effects.  
H400 - Very toxic to aquatic life.  
Precautionary statements (CLP) : P273 - Avoid release to the environment.  
P391 - Collect spillage.  
P501 - Dispose of contents and container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste.

## 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
ZINC OXIDE	(CAS-No.) 1314-13-2 (EC-No.) 215-222-5 (EC Index-No.) 030-013-00-7	70	Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=10)
POLYSYNTHETIC FLUID		20	Not classified
BORON NITRIDE	(CAS-No.) 10043-11-5	10	Aquatic Chronic 1, H410

Full text of H-statements: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.  
First-aid measures after skin contact : Wash skin with plenty of water.  
First-aid measures after eye contact : Rinse eyes with water as a precaution.  
First-aid measures after ingestion : Call a poison centre or a doctor if you feel unwell.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation : Inhalation may cause irritation (cough, short breathing, difficulty in breathing).  
Symptoms/effects after skin contact : Causes mild skin irritation.  
Symptoms/effects after eye contact : mild eye irritation.  
Symptoms/effects after ingestion : Abdominal pain, nausea. May cause irritation to the digestive tract.

### 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 : Water spray. Dry powder. Foam.

### 5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : Toxic fumes may be released.

### 5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment.  
Self-contained breathing apparatus. Complete protective clothing.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area.

#### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

### 6.2. Environmental precautions

Avoid release to the environment.

### 6.3. Methods and material for containment and cleaning up

For containment : Collect spillage.

Methods for cleaning up : Mechanically recover the product.

Other information : Dispose of materials or solid residues at an authorized site.

### 6.4. Reference to other sections

For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool.

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

ZINC OXIDE (1314-13-2)		
EU	Local name	Zinc oxide
EU	Notes	(Ongoing)
EU	Regulatory reference	SCOEL Recommendations
Austria	Local name	Zinkoxid-Rauch
Austria	MAK (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
Austria	Regulatory reference	BGBl. II Nr. 186/2015
Belgium	Local name	Zinc (oxyde de) (fraction alvéolaire) # Zinkoxide (inadembare fractie)
Belgium	Limit value (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
Belgium	Short time value (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Belgium	Regulatory reference	Koninklijk besluit/Arrêté royal 02/09/2018
Bulgaria	Local name	Цинков оксид
Bulgaria	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup> (като цинк)

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ZINC OXIDE (1314-13-2)		
Bulgaria	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (като цинк)
Bulgaria	Regulatory reference	Наредба № 13 от 30.12.2003 г. за защита на работещите от рискове, свързани с експозиция на химични агенти при работа (изм. и доп. ДВ. бр.73 от 4 септември 2018 г.)
Croatia	Local name	Cinkov oksid
Croatia	GVI (granična vrijednost izloženosti) (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
Croatia	KGVI (kratkotrajna granična vrijednost izloženosti) (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Croatia	Regulatory reference	Pravilnik o izmjenama i dopunama Pravilnika o graničnim vrijednostima izloženosti opasnim tvarima pri radu i o biološkim graničnim vrijednostima (NN, br. 75/13)
Czech Republic	Local name	Oxid zinečnatý, jako Zn
Czech Republic	Expoziční limity (PEL) (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
Czech Republic	Expoziční limity (NPK-P) (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
Czech Republic	Regulatory reference	Nařízení vlády č. 361/2007 Sb. (zpracovány změny č. 246/2018 Sb.)
Denmark	Local name	Zinkoxid og zinkoxidrøg
Denmark	Grænseværdie (langvarig) (mg/m <sup>3</sup> )	4 mg/m <sup>3</sup> beregnet som Zn
Denmark	Regulatory reference	BEK nr 655 af 31/05/2018
Estonia	Local name	Tsinkoksiid
Estonia	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
Estonia	Regulatory reference	Vabariigi Valitsuse 18. septembri 2001. a määruse nr 293 (RT I, 30.11.2011, 5)
Finland	Local name	Sinkkioksiidi, huurut
Finland	HTP-arvo (8h) (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
Finland	HTP-arvo (15 min)	10 mg/m <sup>3</sup>
Finland	Regulatory reference	HTP-ARVOT 2018 (Sosiaali- ja terveystieteiden ministeriö)
France	Local name	Zinc (oxyde de)
France	VME (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup> (fumées) 10 mg/m <sup>3</sup> (poussières)
France	Note (FR)	Valeurs recommandées/admises
France	Regulatory reference	Circulaire du Ministère du travail (réf.: INRS ED 984, 2016)
Germany	TRGS 910 Acceptable concentration notes	
Greece	Local name	Ψευδαργύρου Οξειδίο (καπνοί)
Greece	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
Greece	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Greece	Regulatory reference	Π.Δ. 90/1999
Hungary	Local name	CINK-OXID

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ZINC OXIDE (1314-13-2)		
Hungary	AK-érték	5 mg/m <sup>3</sup> respirábilis frakció
Hungary	CK-érték	20 mg/m <sup>3</sup> respirábilis frakció
Hungary	Megjegyzések (HU)	i (ingerlő anyag, amely izgatja a bőrt, nyálkahártyát, szemet vagy mindhármát); III. (FELSZÍVÓDVA HATÓ ANYAGOK (Hatás fellépésének ideje > 2 óra; Felezési idő > műszak idő (ERŐSEN KUMULÁLÓDÓ)))
Hungary	Regulatory reference	25/2000. (IX. 30.) EüM–SZCSM együttes rendelet a munkahelyek kémiai biztonságáról
Ireland	Local name	Zinc oxide, fume
Ireland	OEL (8 hours ref) (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup> R (Respirable Fraction)
Ireland	OEL (15 min ref) (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Ireland	Regulatory reference	Code of Practice for the Chemical Agents Regulations 2018
Latvia	Local name	Cinka oksīds
Latvia	OEL TWA (mg/m <sup>3</sup> )	0.5 mg/m <sup>3</sup>
Latvia	Regulatory reference	Ministru kabineta 2007.gada 15.maija noteikumiem Nr.325 (Grozījumi Ministru kabineta 2011.gada 1.februārī noteikumiem Nr.92)
Lithuania	Local name	Cinko oksidas
Lithuania	IPRV (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
Lithuania	Regulatory reference	LIETUVOS HIGIENOS NORMA HN 23:2011 (Nr. V-695/A1-272, 2018-06-12)
Poland	Local name	Tlenek cynku
Poland	NDS (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup> w przeliczeniu na Zn: frakcja wdychalna
Poland	NDSch (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> w przeliczeniu na Zn: frakcja wdychalna
Poland	Remark (PL)	Frakcja wdychalna – frakcja aerozolu wnikaająca przez nos i usta, która po zdeponowaniu w drogach oddychowych stwarza zagrożenie dla zdrowia.
Poland	Regulatory reference	Dz. U. 2018 poz. 1286
Portugal	Local name	Óxido de zinco
Portugal	OEL TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup> R (Fração respirável)
Portugal	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> R (Fração respirável)
Slovakia	Regulatory reference	Norma Portuguesa NP 1796:2014
Romania	Local name	Oxid de zinc
Romania	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup> (Fumuri)
Romania	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (Fumuri)
Romania	Regulatory reference	Hotărârea nr. 584/2018
Slovakia	Local name	Oxid zinočnatý, dymy
Slovakia	NPHV (priemerná) (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup> dymy respirabilná frakcia
Slovakia	OEL STEL (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup> respirabilná frakcia
Slovakia	Regulatory reference	Nariadenie vlády č. 33/2018 Z.z.
Slovenia	Local name	cinkov oksid – dim

ZINC OXIDE (1314-13-2)		
Slovenia	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
Slovenia	KTV factor SL	4
Slovenia	Regulatory reference	Uradni list RS, št. 38/2015 z dne 4.6.2015
Spain	Local name	Óxido de cinc
Spain	VLA-ED (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup> Fracción respirable
Spain	VLA-EC (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> Fracción respirable
Spain	Notes	d (Véase UNE EN 481: Atmósferas en los puestos de trabajo. Definición de las fracciones por el tamaño de las partículas para la medición de aerosoles).
Spain	Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2018. INSHT
Sweden	Local name	Zinkoxid
Sweden	nivågränsvärde (NVG) (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup> totaldamm
Sweden	Anmärkning (SE)	3 (Med totaldamm menas de partiklar (aerosoler) som fastnar på ett filter i den provtagare som beskrivs i Metodserien, Provtagning av totaldamm och respirabelt damm, Metod nr 1010, Arbetsarkivstyrelsen, numera Arbetsmiljöverket. Filterdiametern är normalt 37 mm, men kan även vara 25 mm. Trots sitt namn provtas inte den totala mängden luftburna partiklar med denna metod)
Sweden	Regulatory reference	Hygieniska gränsvärden (AFS 2018:1)
Iceland	Local name	Sínkoxíð og sínkoxíðreykur, sem Zn
Iceland	OEL (8 hours ref) (mg/m <sup>3</sup> )	4 mg/m <sup>3</sup>
Iceland	Regulatory reference	Reglugerð um mengunarmörk og aðgerðir til að draga úr mengun á vinnustöðum (Nr. 390/2009)
Norway	Local name	Sinkoksid
Norway	Grenseverdier (AN) (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
Norway	Regulatory reference	FOR-2018-08-21-1255
Switzerland	Local name	Oxyde de zinc (fumée) / Zinkoxid (Rauch)
Switzerland	MAK (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup> (a) / (a)
Switzerland	KZGW (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup> (a) / (a)
Switzerland	Critical toxicity	Fimétal / Metallrauch
Switzerland	Remark	NIOSH, OSHA
Switzerland	Regulatory reference	www.suva.ch, 01.11.2018

## 8.2. Exposure controls

### Appropriate engineering controls:

Ensure good ventilation of the work station. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

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## Personal protective equipment:

Protective clothing. Gloves. Safety glasses.

Hand protection:					
Protective gloves					
Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Disposable gloves	Nitrile rubber (NBR)	6 (> 480 minutes)	0.11		EN 374-2
Eye protection:					
Safety glasses					
Type	Use	Characteristics	Standard		
Safety glasses	Droplet		EN 166		
Skin and body protection:					
Wear suitable protective clothing					
Type	Standard				
Disposable gowns, Disposable gloves					
Respiratory protection:					
In case of insufficient ventilation, wear suitable respiratory equipment					
Device	Filter type	Condition	Standard		
Air-Purifying Respirator (APR), disposable	Type P3	Vapour protection, Moist condition	EN 140		

## Personal protective equipment symbol(s):



## Environmental exposure controls:

Avoid release to the environment.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: White.
Odour	: Odourless.
Odour threshold	: No data available
pH	: Approx. 7
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Freezing point	: Not applicable
Boiling point	: > 35 °C

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Flash point	: > 93 °C
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
Flammability (solid, gas)	: Non flammable.
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: Not applicable

## 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

ZINC OXIDE (1314-13-2)	
LD50 oral rat	7950 mg/kg
LC50 inhalation rat (mg/l)	2500 mg/kg



<b>BORON NITRIDE (10043-11-5)</b>	
LD50 oral rat	> 2000 mg/kg
LD50 dermal rat	> 2000 mg/kg
LC50 inhalation rat (mg/l)	5.19 mg/l/4h

Skin corrosion/irritation	: Not classified pH: Approx. 7
Serious eye damage/irritation	: Not classified pH: Approx. 7
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general	: Very toxic to aquatic life with long lasting effects. Before neutralisation, the product may represent a danger to aquatic organisms. Very toxic to aquatic life.
Acute aquatic toxicity	: Very toxic to aquatic life.
Chronic aquatic toxicity	: Very toxic to aquatic life with long lasting effects.

<b>ZINC OXIDE (1314-13-2)</b>	
LC50 fish 1	1.1 mg/l
EC50 Daphnia 1	0.098 mg/l

<b>BORON NITRIDE (10043-11-5)</b>	
LC50 fish 1	> 100 mg/l
NOEC chronic fish	> 100 mg/l

### 12.2. Persistence and degradability

No additional information available

### 12.3. Bioaccumulative potential

No additional information available

### 12.4. Mobility in soil

No additional information available

### 12.5. Results of PBT and vPvB assessment

No additional information available

### 12.6. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

## SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
<b>14.1. UN number</b>				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.2. UN proper shipping name</b>				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.3. Transport hazard class(es)</b>				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.4. Packing group</b>				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.5. Environmental hazards</b>				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
No supplementary information available				

### 14.6. Special precautions for user

#### Overland transport

Not applicable

#### Transport by sea

Not applicable

#### Air transport

Not applicable

#### Inland waterway transport

Not applicable

#### Rail transport

Not applicable

### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

## SECTION 15: Regulatory information

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

#### 15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

Contains no substance subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

Substance(s) are not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC.

## 15.1.2. National regulations

### Germany

Reference to AwSV : Water hazard class (WGK) 3, Highly hazardous to water (Classification according to AwSV, Annex 1)

12th Ordinance Implementing the Federal : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)  
Immission Control Act - 12.BImSchV

### Netherlands

SZW-lijst van kankerverwekkende stoffen : None of the components are listed

SZW-lijst van mutagene stoffen : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : None of the components are listed

### Denmark

Classification remarks : Emergency management guidelines for the storage of flammable liquids must be followed

## 15.2. Chemical safety assessment

No chemical safety assessment has been carried out

## SECTION 16: Other information

Full text of H- and EUH-statements:	
Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Part Number

MPGCS-040-GNS-30g

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