

SAFETY DATA SHEET

Silicone Paste H

Version 1.04
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SECTION 1: Identification of the substance/mixture and of the undertaking

PRODUCT IDENTIFICATION

Silicone Paste H

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

Identified use: Temperature sensor, it facilitates heat transfer between the electronic components and radiator.

Use advised against: not determined

Data on the supplier of the data sheet:

PRODUCER AG Termopasty Grzegorz Gąsowski
18-100 Łapy, ul. Harcerska 8, tel./fax (0 85) 715 33 28

Email of a person responsible for the MSDS: biuro@termopasty.pl

EMERGENCY TELEPHONE 85715 33 28 from 8.00 a.m. to 4.00 p.m.
Toxicological Information 22 618 77 10, National Centre of Toxicological Information 42 631 47 24

SECTION 2: Hazards Identification

The mixture is dangerous for the environment

HEALTH HAZARDS

When properly used the product does not pose threat.

HAZARDS TO THE ENVIRONMENT

It is very toxic for aquatic organisms, may cause long-lasting unfavourable changes in water environment.

PHYSICAL/CHEMICAL HAZARDS

When properly used the product does not pose threat.

The product is subject to labelling obligation.

Label elements:

It contains: zinc oxide;



D - Dangerous for the environment

Phrases indicating the type of risk (R-phrases)

R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Phrases indicating the conditions of safe use of the preparation (S Phrases)

S60 - The product and the packagings should be treated as dangerous waste.

S61 - Avoid discharging to the environment. Follow the instruction manual or the material safety data sheet.

Other hazards:

No other hazards.

No information on fulfilment of PBT or vPvB criteria according to Annex XIII of REACH Regulation.
Proper tests were not performed.


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SECTION 3: Composition/information on ingredients**Substances:**

Not applicable.

Mixtures:

Dangerous components:

Identification of Product	Contents %	Classification as per 67/548/ECC	CLP Classification	
			Hazard class and category codes	Codes of phrases indicating the type of hazard
Zinc white - zinc oxide CAS N°: 1314-13-2 EC No: 215-222-5 Index no.: 030-013-00-7 REACH No.: the substance is subject to the provisions of transitional period	50-55	 N; R50/53	Aquatic Acute 1 Aquatic Chronic 1	H400 H410

Full wording of R and H phrases in section 16

Other components:

Mixture of dimethyl polysiloxane and amorphous silica - concentration 45-50%

SECTION 4: First Aid Measures**IN THE CASE OF SKIN CONTACT:**

Skin contaminated with preparation should be wiped with paper or cloth and washed with warm water and soap.

IN THE CASE OF EYE CONTACT:

Immediately flush eyes with large amounts of water, for at least several minutes. Should the irritation persist, provide medical assistance.

INHALATION:

Little volatile - poisoning by inhalation is little likely. In case of breathing trouble provide fresh air and medical assistance.

IN THE CASE OF SWALLOWING:

Flush mouth with water. Provide medical help. Provide the physician with information on the product.

MOST IMPORTANT ACUTE AND DELAYED SYMPTOMS AND EFFECTS OF EXPOSURE:

Skin contact: possible irritation.

Eyes contact: lacrimation, possible irritation.

Respiratory system: exposure to dusts may cause irritation of mucous membranes of the upper respiratory tract. After the lapse of several up to 12 hours from the end of exposure to fumes or vapours of zinc oxide, generated during thermal treatment of metal the following may occur: headache, pain in the muscles, weakening sensation, rhinitic symptoms, sore throat, fever - over 38°C, rigor, sweating, pain and pressing in chest (similar to "flue-like" symptoms).

Alimentary tract: Ingestion of the product may cause disorders in the alimentary tract.

INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED:

Decision on treatment method is made by a physician, after having examined the condition of an injured.

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SECTION 5: Fire Fighting Procedure**EXTINGUISHING MEDIA****SUITABLE EXTINGUISHING MEDIA**

Silicone paste H is slow-burning. Recommendations listed below are applicable in the event of fire in vicinity. Water, alcohol-resistant foam, carbon dioxide, extinguishing powders.

EXTINGUISHING MEDIA WHICH SHALL NOT BE USED:

Do not use water jet.

SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE:

Containers exposed to fire or high temperatures should be cooled with water from a safe distance; remove them from the area of danger if possible. Possible generation of carbon oxide, carbon dioxide, silicon dioxide (SiO₂). At temperature above 15°C, with the access of oxygen, small amounts of formaldehyde may be released.

INFORMATION FOR FIRE FIGHTERS

Harmful substances may be generated during a fire. Wear gas-tight protective clothes and breathing apparatus that isolates respiratory tract (oxygen respirator combined with a mask). Do not allow the extinguishing media to get into sewage system and watercourses. Notify the neighbourhood about the fire. Remove unauthorized persons that do not participate in fire fighting from the area of danger. Notify the Public Fire Brigade, and if needed also Police, closest local authorities and the closest Chemical Rescue Team.

SECTION 6: Accidental Release Measures**PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:**

For persons that do not belong to the assisting personnel: inform appropriate services about the emergency. Remove unauthorized persons that do not participate repairing failure from the area of danger. *For persons that provide assistance:* Ensure proper personal protective equipment (protective clothes, glasses and gloves).

ENVIRONMENTAL PRECAUTIONS:

In case of emergency do not let to release to the environment. Secure the product against getting into drains, surface and ground water and soil. Try to collect as much as possible, to appropriate containers for further disposal.

METHODS AND MATERIALS USED TO PREVENT SPREADING OF CONTAMINATION AND TO CLEAN UP:

Gather and place in labelled, tight container for recovery or safe disposal of the product. Contaminated surfaces should be cleaned with detergents and rinsed with large amount of water. Water contaminated with the preparation should be disposed as dangerous waste.

REFERENCES TO OTHER SECTIONS:

Handling of product waste - see item 13 hereto.

Personal Protection Equipment - see item 8 hereto.

SECTION 7: Substance/Mixture Handling and Storage**PRECAUTIONS FOR SAFE HANDLING:**

Use in ventilated rooms. Avoid eye contact and prolonged skin contact. Work according to the hygiene and safety rules: do not eat nor drink, do not smoke at the workplace, wash hands after use, take the

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contaminated clothing and protective equipment off before entering the areas intended for food consumption.

CONDITIONS FOR SAFE STORAGE, INCLUDING INFORMATION ON ANY**INCOMPATIBILITIES:**

Store in a well ventilated, cool and dry place. Containers, when not used, should be tightly closed for storage. Protect against sunlight.

SPECIFIC END USE(S):

Temperature sensor, it facilitates heat transfer between the electronic components and radiator. The product is intended for professional use only.

SECTION 8: Exposure Control / Personal Protection Means**CONTROL PARAMETERS:**

MPiPS Regulation - Regulation of the Minister of Labour and Social Policy dated 29 November 2002 on maximum allowable concentrations and levels of harmful factors in the working environment. (J. oL. No. 217/2002, item 1833 as amended: J. oL. No. 212/2005 item 1769, J. oL. No. 161/2007, item 1142, J. oL. No. 105/2009, item 873);

Components covered by exposure standards:

	Name of a substance	CAS No.	TLV	TLV-STEL	TLV-CL
1.	Amorphous synthetic silica (precipitated and gel) <ul style="list-style-type: none"> • Total dust • Respirable dust 	–	10 mg/m ³ 2 mg/m ³	n/a n/a	n/a n/a
2.	Zinc oxide - calculated into Zn - fumes	1314-13-2	5 mg/m ³	10 mg/m ³	not determined

DETERMINING IN THE AIR ON WORKPLACES

Regulation of MZ [*Minister of Health*] dated April 20th, 2005 *on tests and measurements of harmful factors in the working environment* (J. oL. No. 73/2005, item 645 as amended).

PN-EN 1540:2004 Workplace Atmospheres - Terminology; PN-Z-04008-7:2002 Air cleanness protection.

Measurements of concentrations of chemical substances and industrial dusts in the air in working environment. Rules of air sampling in working environment and interpretation of the results;

PN-Z-04008-7:2002/Az1:2004 Amendment to the standard on Air Cleanness Protection. Measurements of concentrations of chemical substances and industrial dusts in the air in working environment. Rules of air sampling in working environment and interpretation of the results.

Dusts: PN-91/Z-04018/02, PN-91/Z-04018/03, PN-91/Z-04018/04, PN-91/Z-04030/05, PN-91/Z-04030/06, PN-Z-04008-7:2002, PN-EN 481:1998, PN-ISO 4225:1999, PN-ISO 4225/Ak:1999, PN-EN 1540:2004;

Zinc oxide: PN-87/Z04100/02, PN-87/Z04100/03.

PROPER ENGINEERING CONTROLS:

Efficient local exhaust ventilation and general ventilation in the room is necessary.

INDIVIDUAL PROTECTION MEASURES SUCH AS INDIVIDUAL PROTECTIVE EQUIPMENT:**EYES OR FACE PROTECTION:**

Avoid contact with eyes. When handling the product, if there is a risk of exposure, wear protective glasses with side shields or safety goggles that do not mist up (if combined with a half-mask).

SKIN PROTECTION

Avoid skin contact. Wear protective gloves made of natural rubber, nitrile rubber, butyl rubber or PVAL.

Gloves material:

Selection of appropriate gloves does not depend solely on the material, but a make and quality that is

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different at different producers. Resistance of material used to make gloves may be determined after having performed the tests. The exact time of gloves destruction must be determined by a producer.

Others: Avoid skin contact.

RESPIRATORY PROTECTION

Avoid inhaling dusts. When the substance concentration is determined and known, the personal protective equipment should be selected considering the concentration of substances present on a given working stand, time of exposure, activities performed by an employee and recommendations of the PPE manufacturer. In emergencies use a half-mask or a mask combined with dust filter.

THERMAL HAZARDS:

Not applicable.

BIOLOGICAL MONITORING

Not determined

MONITORING OF THE ENVIRONMENT

Permissible concentration of the substance in the air - Resolution of MŠ [Minister of the Environment] dated March 3rd, 2008 *on the levels of certain substances in the air* (J. oL. 2008 No. 47 item 281): not determined.

Permissible indices values of pollution in industrial wastewater let into the sewerage units - Regulation of MB dated July 14th, 2006 *on the method of fulfilment of obligations by industrial wastewater suppliers and on conditions of letting wastewater into sewerage units* (J. oL. 2006 No. 136 item 964): Zinc: 2 mg Zn/l.

9. PHYSICAL AND CHEMICAL PROPERTIES**Information on basic physical and chemical properties**

Appearance:	paste, white
Odour:	odourless
pH:	not applicable
Boiling point:	not applicable
Freezing point:	-50 °C
Flash point	350 °C
Autoignition point:	not determined
Explosion limits:	not applicable
Vapour pressure:	not determined
Specific gravity:	not determined
Density:	2,58 (± 0.02) g/cm ³
Vapour density:	not determined
Solubility in water:	non-soluble
Other solvents	chloride hydrocarbons, aromatic solvents, gasoline
Evaporation rate:	not determined
Volatile compounds:	not applicable
Viscosity:	not determined
Refractive index	1.405
Specific heat at 50°C	0.243 Cal/g K
Heat transfer coefficient at 0-150 °C	0.78 W/m K
Dielectric constant at 100 Hz	4.7 (± 0.1)
Volume resistivity	5 x 10 ¹⁴ Ω x cm
Loss tangents at f= 100 Hz	0.020 (± 0.003)
Range of operating temperatures	-50 ÷ 200 °C

Other information:

No additional tests results.

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SECTION 10: Stability and Reactivity**REACTIVITY**

Not known.

CHEMICAL STABILITY

Stable when proper storage and use conditions are maintained. Dangerous polymerization is not expected.

POSSIBILITY OF OCCURRENCE OF HAZARDOUS REACTIONS:

Dangerous polymerization is not expected.

CONDITIONS TO BE AVOIDED

Avoid elevated temperature, direct effect of sunlight, hot surfaces and open fire.

NON-CONFORMING MATERIALS:

Avoid contact with strong oxidisers.

HAZARDOUS DECOMPOSITION PRODUCTS:

Carbon oxides, silicon dioxide.

SECTION 11: Toxicological Information**INFORMATION ON TOXICOLOGICAL EFFECTS**

a) acute toxicity:

Zinc oxide: LD50 (rat, oral): 15000 mg/kg

b) irritating effect: no

c) corrosive effect: no

d) sensitizing effect: no

e) toxicity for a repeatable dose: no data

f) carcinogenicity: no

g) mutagenicity: no

h) toxicity for reproduction: no

None of the product components is classified as carcinogenic, mutagenic or toxic for reproduction acc. to the provisions of Law dated January 11th, 2001 on chemical substances and preparations (J. oL. No. 11/2001, item 84 as amended) and is not included in the list of carcinogenic or mutagenic substances that forms an Annex to the Regulation of Health Minister dated December 1st, 2004 on substances, preparations, factors or technological processes having carcinogenic or mutagenic effect in working environment (J. oL. No. 280/2004, item 2771).

No detailed tests on product toxicity were carried out. In respect of the included components the mixture is not classified as dangerous to human health.

INFORMATION ON PROBABLE ROUTES OF EXPOSURE:**INHALATION**

Exposure to dusts may cause irritation of mucous membranes of the upper respiratory tract.

After the lapse of several up to 12 hours from the end of exposure to fumes or vapours of zinc oxide, generated during thermal treatment of metal the following may occur: headache, pain in the muscles, weakening sensation, rhinitic symptoms, sore throat, fever - over 38°C, rigor, sweating, pain and pressing in chest (similar to "flue-like" symptoms).

SKIN CONTACT

Avoid skin contact. May be irritating to skin.

EYES CONTACT

Avoid contact with eyes. May be irritating to eyes.

INGESTION

Ingested zinc oxide in the form of powder may cause nausea, vomiting, stomach-ache. Ingestion of the product may cause disorders in the alimentary tract. Immediately contact a physician.

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Symptoms of chronic poisoning: repeated episodes of zinc fever may occur at persons with individual hypersensitivity and at persons that smoke cigarettes. Repeatable skin exposure to the zinc oxide dust may cause acne changes due to the occlusion of sebaceous glands.

Effects of mutual interaction:

No data available.

SECTION 12: Ecological information

It is very toxic for aquatic organisms, may cause long-lasting unfavourable changes in water environment. Do not allow the preparation to get into surface water, sewage system and watercourses.

TOXICITY:

Zinc oxide:

Inhibition of algae growth (IC₅₀/72 h) = 0.170 mg/l

STABILITY AND ABILITY TO DECOMPOSE:

When stored in recommended conditions and used as intended the product does not decompose.

BIOACCUMULATIVITY:

No data available.

MOBILITY IN SOIL:

Silicone Paste H is a little volatile substance, poses to threat to the atmospheric air, it may pose threat to surface waters and soil. Avoid getting the product into sewerage, water tanks, ground waters and soil.

THE RESULTS OF ASSESSMENT OF PBT AND vPvB PROPERTIES:

No data available.

OTHER HARMFUL EFFECTS:

No data available.

SECTION 13: Handling of Wastes**USED PRODUCT**

Do not remove to the sewage system. Do not allow contamination of surface and underground water. Do not dispose of together with municipal wastes. Incinerate in the dangerous wastes incineration plant, in presence of flammable materials. Method of disposal of gathered waste should be agreed with a Department of the Environment Protection in a Voivodship Office or a Starosty.

Dispose of as hazardous wastes code: 13 03 10 other insulating and heat transmission oils (Regulation of MŚ [*Minister of the Environment*], J. oL. No. 112/2001, item 1206).

CONTAMINATED PACKAGING

Emptied, disposable packagings should be forwarded to an authorized wastes recipient.

Packagings code: 15 01 10 Packagings containing residues of or contaminated by dangerous substances (Regulation of MŚ [*Minister of the Environment*], J. oL. No. 112/2001, item 1206).

Community regulations on wastes:

Council Directive No. 75/442/EEC on wastes, Council Directive No. 91/689/EEC on dangerous wastes, Commission Decision No. 2000/532/EC of May 3rd, 2000 with a wastes list, OJ No. L 226/3 of September 6th, 2000 with amending decisions.

SECTION 14: Transport information

UN Number (ONZ number): Not applicable, the product is not classified as dangerous during

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transportation.

Correct UN shipping name: Not applicable, the product is not classified as dangerous during transportation.

Transport hazard class(es): Not applicable, the product is not classified as dangerous during transportation.

Packaging group: Not applicable, the product is not classified as dangerous during transportation.

Hazards to the environment: Not applicable, the product is not classified as dangerous during transportation.

Particular precautions for users: Not applicable, the product is not classified as dangerous during transportation.

Transport in bulk according to Annex II of MARPOL 73/78 Convention and the IBC Code: Not applicable, the product is not classified as dangerous during transportation.

SECTION 15: Regulatory Information

Safety, health and environment legislation specific for the substance or mixture:

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of December 18th, 2006, on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) as amended.

COMMISSION REGULATION (EU) No 453/2011 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

Act of January 11th, 2001 on chemical substances and preparations (J.oL. No. 11, item 84 as amended).

Regulation of the Health Minister dated September 2nd, 2003 on the criteria and method for classification of chemical substances and preparations (J.oL. No. 171, item 1666 as amended).

Regulation of the Health Minister dated February 8th, 2010 on the list of dangerous substances together with their classification and labelling (J. oL. No. 27, item 140).

Regulation of the European Parliament and of the Council of December 16th, 2008 No. 1272/2008 (CLP) – (art. 55, Annex VI, tab. 3.2) as amended.

Regulation of the Health Minister dated March 3rd, 2009 on labelling of packaging for dangerous substances and preparations and certain chemical preparations. (J.oL. No. 53 item 439).

Regulation of the Minister of the Environment dated April 23rd 2004 on determination of packaging labelling designs (J.oL. No. 94, item 927).

Regulation of the Minister of Health dated September 29th 2010 on dangerous substances and preparations in packagings with child-resistant fastenings and tactile warning of danger (J. oL. No. 83, item 544).

Act dated April 27th 2001 on waste (J.oL. No. 62, item 628 as amended).

Act of May 11th, 2001 on packaging and packaging waste (J.oL. No. 63, item 638 as amended).

Regulation of the Minister of Environment dated September 27th, 2001 on wastes catalogue (J.oL. No. 112, item 1206).

Council Directive No. 75/442/EEC on waste, Council Directive No. 91/689/EEC on dangerous waste, Decision of the Commission No. 2000/532/EC of May 3rd, 2000 with wastes list, OJ No. L 226/3 of September 6th, 2000, together with the amending decisions.

Act of October 28th, 2002 on dangerous goods transported by road (J.oL. No. 199, item 1671 as amended).

Governmental declaration dated January 16th, 2009 on entry into effect of amendments to enclosures A and B to the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), made up in Geneva on September 30th, 1957 (J.oL. No. 27, item 162). ADR Regulations - legal status from January 1st, 2009.

Regulation of the Minister of Labour and Social Policy dated 29 November 2002 on maximum allowable concentrations and levels of harmful factors in the working environment (J.oL. No. 217, item 1833, as amended).

Regulation of the Minister of Health dated December 1st, 2004 on substances, preparations, agents of

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technological processes having a carcinogenic or mutagenic impact in the work environment (J.oL. No. 280, item 2771 as amended).

Regulation of the Minister of Health dated December 30th 2004 on hygiene and safety of work related with the occurrence of chemical agents at workplace (J. oL. No. 11/2005, item 86 as amended).

Regulation of the Minister of the Environment dated December 9th, 2003 on substances that pose particular hazard to the environment (J.oL. No. 217, item 2141).

Assessment of Chemical Safety:

No chemical safety assessment for substances contained in the mixture and for the mixture.

SECTION 16: Other information

All data are based on the current state of our knowledge. The Data Sheet was prepared based on the MSDS and data obtained from a Manufacturer. Recipients of our product must take into consideration the existing rules of law and other regulations.

Other sources of key data used in elaboration of this Data Sheet:

- RTECS Computer Database /Registry of Toxic Effects of Chemical Substances/, elaborated by the National Institute for Occupational Safety and Health, 2005.
- Computer Database – Material Safety Data Sheets, elaborated by the Central Labour Protection Institute - National Research Institute, 2005.
- "Harmful factors in the working environment - permissible limits" - issued by the Central Labour Protection Institute - National Research Institute, 2005.
- Computer Database EINECS, 2005.
- Data Sheet of a mixture of dimethyl polysiloxane and amorphous silica, updated on: 2009-03-20.
- Data Sheet of zinc white preparation, updated on: 2006-01-02.
- Annex No. I to the Regulation (EU) 453/2010 dated May 20th, 2010.

R and H Phrases:

R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

H400 - Toxic to the aquatic life

H410 - Toxic to the aquatic life with long lasting effects

Description of Abbreviations, Acronyms and Symbols used hereto:

D - The product is dangerous for the environment;

Aquatic Acute 1 – Hazardous to the aquatic environment, acute hazard category 1

Aquatic Chronic 1 – Hazardous to the aquatic environment, chronic hazard category 1

Classification:

1. Based on the Flash Point the preparation is not classified as flammable.
2. The product is subject to D classification; R50/53 in accordance with the criteria of classification and concentration limit as well as the content of zinc oxide in the preparation (50-55%).
3. S2 and S46 Phrases are not used, because the preparation is not intended for sale to the consumers.

Informing the Inspector for Chemical Substances and Preparations about introducing the preparation to the market in the territory of the Republic of Poland is required in accordance with the requirements of the provisions of Art 23 of the Act dated January 11th 2001 on chemical substances and preparations (J. oL. No. 11/2001, item 84 as amended), as the preparation is classified as dangerous.