Parker Hannifin Ltd., Engineered Materials Group
Chomerics Division Europe
Unit 6 Century Point Halifax Road
High Wycombe Bucks, HP12 3SL
United Kingdom
Telephone: 044 (0) 1494 455 400

SAFETY DATA SHEET

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

SECTION 1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1 Product identifier : **CHO-THERM T500**

Product Code(s) : T500

SDS No. : PHC-0794 EU

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

: Thermally Conductive Gap Filler Pad.
Use pattern: professional use
No restrictions on use known.

1.3 Details of the supplier of the safety data sheet:

Parker Hannifin Manufacturing France SAS
ZAC des Epineaux
7 avenue Louis Blériot
95740 Frépillon
France
Email: parker.france@parker.com
Website: www.parkerfrance.fr

Telephone : 033 (01) 34 32 39 00

1.4 Emergency Telephone Number

: INFOTRAC - (800) 535-5053 (Within Continental US); (352) 323-3500 (Outside US)
Poisons Information Centre
France +33 3 83 85 21 92
The United Kingdom : NHS 111

1.5 National Contact

: E-mail: chomerics_europe@parker.com
Website: www.chomerics.com

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Article- Fiberglass reinforced boron nitride filled silicone pad. No odour.

The product is an article and is not subject to the classification criteria of Regulation (EC) 1272/2008. Note: This product falls under the definition of an article under Regulation (EC) No. 1272/2008 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (Products with a specific shape, surface or design which determines their function more than their chemical composition). REACH requires that Parker Chomerics inform requestors of the presence of Candidate List Substances of Very High Concern (SVHC) in a concentration of > 0.1% by total weight in Articles. This product does not intentionally contain any substances present on the Candidate List SVHC's.

2.2 Label elements

Hazard pictogram(s)

None required according to Regulation (EC) No. 1272/2008.

Signal word
None required according to Regulation (EC) No. 1272/2008.

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Hazard statements

None required according to Regulation (EC) No. 1272/2008.

Precautionary statements

None required according to Regulation (EC) No. 1272/2008.

2.3 Other hazards

Other hazards which do not result in classification:
The ingredients listed in Section 3 are encapsulated within the matrix, therefore, no exposure to these materials is expected during proper use/handling of this product.
Burning produces obnoxious and toxic fumes. Inhalation of fumes may result in metal fume fever, a flu-like illness. When heated above 150°C in air, may release formaldehyde gas. Formaldehyde is an eye and throat irritant and acute toxicant. Formaldehyde may cause sensitisation by skin contact. Formaldehyde has shown limited evidence of a carcinogenic effect.

Endocrine disrupting properties: Not applicable.

Environmental precautions: Avoid release to the environment. The ingredients listed in Section 3 are encapsulated within the matrix, therefore, no exposure to these materials is expected during proper use/handling of this product. Not expected to be harmful to aquatic organisms.

PBT assessment This preparation contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Chemical nature of the preparation: Solid article. -Fiberglass reinforced boron nitride filled silicone pad.
The following substances shall be indicated according to legislation:

Substance name	CAS No	EC No.	Reach Registration No.	% Weight	Classification according to Regulation (EC) nr. 1272/2008	SCL, M-factor, ATE
Boron nitride (BN)	10043-11-5	233-136-6	Not applicable.	**60.0 - 70.0**	None assigned. Substances for which there are Community workplace exposure limits.	Not applicable.
Diboron trioxide	1303-86-2	215-125-8	Not available	**1.0 - 5.0**	Repr. 1B ; H360Fd	Not applicable.

Note: The ingredients listed in Section 3 are encapsulated within the matrix, therefore, no exposure to these materials is expected during proper use/handling of this product.

For the full text of the H phrases not mentioned in this Section or in Section 2, see Section 16.

SECTION 4. FIRST-AID MEASURES

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4.1 Description of first aid measures

Ingestion : Do NOT induce vomiting. Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt, seek medical advice.

Inhalation : If breathed in, move person into fresh air. If breathing is irregular or stopped, administer artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. When symptoms persist or in all cases of doubt, seek medical advice.

Skin contact : Remove/Take off immediately all contaminated clothing. Wash off immediately with soap and plenty of water. When symptoms persist or in all cases of doubt, seek medical advice. Wash contaminated clothing before re-use.

Eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

4.1.2 Self-protection for the first aider

: None known or reported by the manufacturer.

4.2 Most important symptoms and effects, both acute and delayed

: The ingredients listed in Section 3 are encapsulated within the matrix, therefore, no exposure to these materials is expected during proper use/handling of this product. Inhalation of fumes may result in metal fume fever, a flu-like illness.

When heated above 150°C in air, may release formaldehyde gas. Formaldehyde is an eye and throat irritant and acute toxicant. Formaldehyde may cause sensitisation by skin contact. Formaldehyde has shown limited evidence of a carcinogenic effect.

4.3 Indication of any immediate medical attention and special treatment needed

: Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

: Carbon dioxide (CO2); Dry chemical; Alcohol resistant foam; Water spray.

Unsuitable extinguishing media

: None known.

5.2 Special hazards arising from the substance or mixture

: The pressure in sealed containers can increase under the influence of heat. Burning produces obnoxious and toxic fumes. In the event of fire the following can be released: Metal oxides; Nitrogen oxides (NOx); Carbon oxides; formaldehyde; Other unidentified organic compounds.

5.3 Advice for firefighters

Protective equipment for fire-fighters

: Wear self-contained breathing apparatus and protective suit. Fight fire with normal precautions from a reasonable distance.

Special fire-fighting procedures

: Move containers from fire area if safe to do so. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Dike for water control.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

: Wear suitable protective equipment. Refer to protective measures listed in sections 7 and 8.

6.2 Environmental precautions

: Do not allow material to contaminate ground water system.

6.3 Methods and material for containment and cleaning up

: Ventilate the area. Prevent further leakage or spillage if safe to do so. Pick up and transfer to properly labeled containers. Contact the proper local authorities.

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6.4 Reference to other sections

: Refer to protective measures listed in sections 7 and 8. Refer to Section 13 for disposal of contaminated material.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

: Ensure adequate ventilation. Wear suitable protective equipment. Avoid breathing vapors, fumes or dust. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Keep away from acids and other incompatibles. Wash thoroughly after handling. Keep containers closed when not in use.

7.2 Conditions for safe storage, including any incompatibilities

: Keep containers tightly closed in a cool, well-ventilated place. Keep away from heat. Inspect periodically for damage or leaks. Protect against physical damage.

7.3 Specific end use(s) : Thermally Conductive Gap Filler Pad - Electronics industry.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control Parameters

Exposure Limits:

Chemical Name	Exposure Limits	Type	Notes
Boron nitride (BN)	N/Av	Germany (OEL)	N/Av
	6 mg/m³ (TWA)	Latvia (OEL)	None.
	N/Av	The United Kingdom (WELs)	N/Av
Diboron trioxide	10 mg/m³ (TWA)	France (OEL)	None.
	N/Av	Germany (OEL)	N/Av
	10 mg/m³ (dust) (TWA)	Poland (OEL)	None.
	10 mg/m³ (TWA)	Spain (OEL)	None.
	10 mg/m³ (TWA) 20 mg/m³ (STEL)	The United Kingdom (WELs)	None.

Biological Exposure Indices:

No biological exposure limits noted for the ingredient(s).

Derived No Effect Level (DNEL)
(CAS # 1303-86-2)
general population oral systemic effects long term exposure 0.55 mg/kg bw/day ; general population oral systemic effects acute/short term exposure 0.55 mg/kg bw/day ; general population inhalation systemic effects long term exposure 2.34 mg/m3 ; workers inhalation systemic effects long term exposure 4.66 mg/m3; general population dermal systemic effects long term exposure 110.3 mg/kg bw/day; workers dermal systemic effects long term exposure 220.6 mg/kg bw/day
Predicted No Effect Concentration (PNEC)
(CAS # 1303-86-2)
2.9 mg/L (freshwate); 2.9 mg/L (marine wate); 13.7 mg/L (freshwater (intermittent releases)); 10 mg/L (sewage treatment); 5.7 mg/kg (soil)

8.2 Exposure controls

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Ventilation and engineering measures
: Provide adequate ventilation. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. In case of insufficient ventilation wear suitable respiratory equipment.

Respiratory protection : not required under normal use. In the case of vapour formation use a respirator with an approved filter. The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Skin protection : Wear protective gloves.The suitability for a specific workplace should be discussed with the producers of the protective gloves. The selected protective gloves have to satisfy the specifications of EU Directive 89/689/EEC and the standard EN 374 derived from it.

Eye / face protection : Safety goggles or glasses as appropriate for the job. See also EN 166.

Other protective equipment
: Ensure that eyewash stations and safety showers are close to the workstation location.

General hygiene considerations
: Avoid breathing vapors, fumes or dust. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Remove and wash contaminated clothing before re-use.

8.3 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 : Solid article.
Colour : Not available.
Odour : No odour.
Odour threshold : No information available.
pH : No information available.
Flash point : No information available.
Flashpoint (Method) : No information available.
Lower flammable limit (% by vol.)
: No information available.
Upper flammable limit (% by vol.)
: No information available.
Auto-ignition temperature
: No information available.
Decomposition temperature
: No information available.
Oxidizing properties : None known.
Explosive properties : Not expected to be sensitive to mechanical impact or static discharge.
Initial boiling point and boiling range
: No information available.
Melting/Freezing point : No information available.
Relative density : No information available.
Solubility in water : insoluble
Other solubility(ies) : No information available.
Vapour pressure : Not applicable.

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Vapour density : Not applicable.
Partition coefficient: n-octanol/water
: No information available.
Viscosity : Not applicable.
Evaporation rate (BuAe = 1)
: No information available.
Particle characteristics : Not applicable.

9.2 Other Information

Volatiles (% by weight) : negligible
Volatile organic Compounds (VOC's)
: No information available.
Other physical/chemical comments
: No additional information.

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity : Not normally reactive.
10.2 Chemical stability : Stable under normal conditions.
10.3 Possibility of hazardous reactions
: When heated above 150°C in air, may release formaldehyde gas.
10.4 Conditions to avoid : Direct sources of heat. Do not use in areas without adequate ventilation. Avoid contact with incompatible materials.
10.5 Incompatible materials
: Acids; Bases; Oxidizing agents; Halogenated compounds.
10.6 Hazardous decomposition products
: Burning produces obnoxious and toxic fumes. In the event of fire the following can be released: Metal oxides; Nitrogen oxides (NOx); Carbon oxides; formaldehyde; Other unidentified organic compounds.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological effects:

Acute toxicity : According to the classification criteria of the European Union, this product is not considered as being an acutely toxic chemical.
Skin corrosion/Irritation : According to the classification criteria of the European Union, the product is not considered as being a skin irritant.
Serious eye damage/irritation
: According to the classification criteria of the European Union, the product is not considered as being an eye irritant.
Respiratory or skin sensitisation
: According to the classification criteria of the European Union, this product is not considered as being an allergic respiratory sensitiser.
According to the classification criteria of the European Union, this product is not considered as being an allergic skin sensitiser.
Avoid heating, which will result in the liberation of formaldehyde gas. Formaldehyde may cause sensitisation by skin contact.
Germ cell mutagenicity : Contains no ingredient listed as a mutagen.
Avoid heating, which will result in the liberation of formaldehyde gas. Formaldehyde may cause mutations to non-reproductive (somatic) cells, based on animal data.

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Carcinogenicity : Not classifiable as a human carcinogen.
Avoid heating, which will result in the liberation of formaldehyde gas. Formaldehyde has shown limited evidence of a carcinogenic effect.

Reproductive toxicity : Not classifiable as a reproductive toxin.

STOT-single exposure : According to the classification criteria of the European Union, this product is not expected to cause target organ toxicity through a single exposure.

STOT-repeated exposure : According to the classification criteria of the European Union, this product is not expected to cause target organ toxicity through repeated exposures.

Aspiration hazard : According to the classification criteria of the European Union, this product is not considered as being an aspiration hazard to humans.

Routes of exposure : Eye contact; Skin contact; Inhalation; Ingestion.

Effects of acute exposure : Inhalation: At normal/ambient handling temperatures, minimal or no irritation due to inhalation of vapours or mists is expected. Inhalation of fumes may result in metal fume fever, a flu-like illness. Symptoms of metal fume fever may include fever, fatigue, vomiting, muscle aches and shortness of breath. Avoid heating, which will result in the liberation of formaldehyde gas. Formaldehyde causes severe respiratory irritation, lung inflammation and pulmonary edema.
Skin contact: None reasonably foreseeable.
Eye contact: None reasonably foreseeable. If dusts are formed and exposure occurs: Dust contact with the eyes can lead to mechanical irritation. Avoid heating, which will result in the liberation of formaldehyde gas. Formaldehyde gas causes moderate to severe eye irritation.
Ingestion: None reasonably foreseeable. If material is ingested, may cause irritation to mucous membranes. May cause nausea, stomach pain and vomiting.

Potential Chronic Health Effects
: No hazards resulting from the material as supplied.

Information on other Hazards
: Avoid heating, which will result in the liberation of formaldehyde gas.

11.1.1 Acute Toxicity

Toxicological data : There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data.

Chemical name	LC_{50}(4hr) inh, rat	LD_{50} (Oral, rat)	LD_{50} (Rabbit, dermal)
Boron nitride (BN)	> 5.19 mg/L (dust)	> 2000 mg/kg	> 2000 mg/kg
Diboron trioxide	> 2.12 mg/L (dust) (No mortality)	3150 mg/kg	> 2000 mg/kg (No mortality)

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties: Not applicable

11.2.2 Other hazards : none

SECTION 12. ECOLOGICAL INFORMATION

12.1 Toxicity : No data is available on the product itself. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters. As supplied, not expected to be toxic to fish and aquatic plants.

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Ecotoxicity data:

Ingredients	CAS No	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
Boron nitride (BN)	10043-11-5	N/Av	N/Av	N/Av
Diboron trioxide	1303-86-2	79.7 mg/L (Fathead minnow)	11.2 mg/L 32-day (Fathead minnow)	None.

Ingredients	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Boron nitride (BN)	10043-11-5	N/Av	N/Av	N/Av
Diboron trioxide	1303-86-2	91 mg/L Ceriodaphnia (water flea)	6 mg/L (Daphnia magna)	None.

Ingredients	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Boron nitride (BN)	10043-11-5	N/Av	N/Av	N/Av
Diboron trioxide	1303-86-2	52.4 mg/L/72hr (Green algae)	17.5 mg/L/72hr	None.

12.2 Persistence and degradability

: The product itself has not been tested. Not expected to be rapidly biodegradable.

12.3 Bioaccumulation potential

: The product itself has not been tested.

12.4 Mobility in soil : The product itself has not been tested.

12.5 Results of PBT and vPvB assessment

: This preparation contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).

12.6 Endocrine disrupting properties

: None known or reported by the manufacturer.

12.7 Other Adverse Environmental effects

: None known.

12.8 Additional information : None known or reported by the manufacturer.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods:

Handling for Disposal : Handle in accordance with good industrial hygiene and safety practice. Refer to protective measures listed in sections 7 and 8.

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Methods of Disposal : Dispose of in accordance with the European Directives on waste and hazardous waste. Waste must be classified and labelled prior to recycling or disposal. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

SECTION 14. TRANSPORTATION INFORMATION

Regulatory Information	**14.1 UN Number**	**14.2 UN proper shipping name**	**14.3 Transport hazard class(es)**	**14.4 Packing Group**	*Label*
ADR/RID	None	not regulated	Not regulated	none	
ADR/RID Additional information	Not classified as dangerous for conveyance in the meaning of the regulations for the transport of dangerous goods by road and rail.				
ICAO/IATA	None	Not regulated.	Not regulated	none	
ICAO/IATA Additional information	None.				
IMDG	None	Not regulated.	Not regulated	none	
IMDG Additional information	None.				

14.5 Environmental hazards : This product does not meet the criteria for an environmentally hazardous mixture, according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.

14.6 Special precautions for user

: Appropriate advice on safety must accompany the package.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

: Not applicable.

SECTION 15. REGULATORY INFORMATION

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

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This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

: Classification according to Regulation (EC) No. 1272/2008 on the classification of hazardous mixtures.

Authorisations
Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended: None of the components are specifically listed.

Restrictions on use
Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use, as amended: Refer to restrictions found in REACH Annex XVII item 30. Refer to restrictions found in REACH Annex XVII item 75.

Directive 94/33/EC on the protection of young people at work: (CAS # 1303-86-2)

Directive 98/24/EC on the protection of the health and safety of workers from risks related to chemical agents at work: (CAS # 1303-86-2)

Directive 2012/18/EU (Seveso III) on the control of major-accident hazards involving dangerous substances: None of the components are specifically listed.

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006, as amended [including Regulation (EU) 2020/878].

German legislation on water endangering substances AWSV Water hazard class (Germany):No information available.

15.2 Chemical safety assessment

: A chemical safety assessment has not been carried out by the Manufacturer of this product.

SECTION 16. OTHER INFORMATION

Legend :

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS: Chemical Abstract Services
EC: European Community
EEC: European Economic Community
EINECS: European Inventory of Existing Commercial chemical Substances
EN: European Standard
EU: European Union
IATA: International Air Transport Association
ICAO: International Civil Aviation Organisation
IMDG: International Maritime Dangerous Goods
LC: Lethal Concentration
LD: Lethal Dose
OEL: National occupational exposure limits
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail
STEL: Short Term Exposure Limit
TWA: Time Weighted Average

Information Source : 1. Material Safety Data Sheet from manufacturer.
2. Canadian Centre for Occupational Health and Safety, CCInfoWeb Databases
3. European Chemicals Agency, Classification Legislation
4. OECD - The Global Portal to Information on Chemical Substances

Preparation Date (dd/mm/yyyy)

: 13/07/2023

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Regulation and Procedure :

not regulated ; Expert judgement

H-phrases (full-text)

H301 - Toxic if swallowed.
H311 - Toxic in contact with skin.
H314 - Causes severe skin burns and eye damage.
H317 - May cause an allergic skin reaction.
H331 - Toxic if inhaled.
H341 - Suspected of causing genetic defects <state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard>.
H350 - May cause cancer <state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard>.

Other special considerations for handling

: Provide adequate information, instruction and training for operators.

Prepared for: Parker Hannifin Corp. 77 Dragon Court Woburn, MA, USA 01888 Telephone: 001-781-935-4850 http://www.parker.com Direct all enquiries to Parker Hannifin.	
Prepared by: ICC The Compliance Center Inc. http://www.thecompliancecenter.com	

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