

Name, address, and telephone number of

Therm-A-Gap™ TPS60 SDS No: PHC-452

SDS Preparation Date (mm/dd/yyyy): 01/16/2020

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SECTION 1. IDENTIFICATION

Product identifier used on the label

: Therm-A-Gap™ TPS60

Other means of identification: Therm-A-Gap TPS60, TPS60G Recommended use of the chemical and restrictions on use

: Thermal putty pad

No restrictions on use known.

: Mixture of : Alumina; Siloxanes

SDS number : PHC-452

Name, address, and telephone number of

the manufacturer: the supplier:
Parker Hannifin Corp. Refer to manufacturer

Chomerics Division 77 Dragon Court Woburn, MA, USA

Chemical family

01888

Manufacturer's Telephone # : (781) 935-4850

24 Hr. Emergency Tel # : INFOTRAC: (800) 535-5053 (Within Continental US and Canada); (352) 323-3500

(International)

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Black solid. No odour.

Most important hazards:

Occupational exposure to the substance or mixture may cause adverse effects. For further information, please refer to section 11 of the SDS.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. See Section 12 for more environmental information.

This material is not classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Label elements

Hazard pictogram(s)

None required under U.S. OSHA Hazcom 2012 and Canadian WHMIS 2015 regulations.

Signal Word

None required under OSHA HazCom2012 and 2015 Canadian WHMIS regulations.

Hazard statement(s)

None required under OSHA HazCom2012 and 2015 Canadian WHMIS regulations.

Precautionary statement(s)

None required under OSHA HazCom2012 and 2015 Canadian WHMIS regulations.

Other hazards

Other hazards which do not result in classification:

Toxic fumes, gases or vapours may evolve on burning. May cause mild respiratory irritation at higher temperatures. Inhalation of fumes may result in metal fume fever, a flu-like illness. May cause gastrointestinal irritation.



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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Chemical name	Common name and synonyms	CAS#	Concentration (% by weight)
aluminum oxide	Aluminum trioxide Alumina	1344-28-1	80.0 - 100.0
Polydimethylsiloxane	Dimethicone PDMS	63148-62-9	7.0 - 13.0

The exact concentrations of the above listed chemicals are being withheld as a trade secret.

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

Ingestion : Do NOT induce vomiting. Rinse mouth. No

: Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Call a POISON CENTER or doctor/physician if you feel unwell.

Inhalation : If inhaled, move to fresh air. If breathing is difficult, give oxygen by qualified medical

personnel only. If breathing has stopped, give artificial respiration. If irritation or symptoms develop, seek medical attention.

Skin contact: For skin contact, wash with soap and water while removing contaminated clothing. If

skin irritation occurs, get medical attention.

Eye contact : Rinse thoroughly with plenty of water, also under the eyelids. Remove contact lenses,

if present and easy to do. If eye irritation persists: get medical advice/attention.

Most important symptoms and effects, both acute and delayed

: 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. May cause mild respiratory irritation at higher temperatures. May cause coughing and breathing difficulties.

If material is ingested, may cause irritation to mucous membranes. May cause nausea,

stomach pain and vomiting.

Indication of any immediate medical attention and special treatment needed

: Provide general supportive measures and treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

 Use media suitable to the surrounding fire such as water fog or fine spray, alcohol foams, carbon dioxide and dry chemical.

Unsuitable extinguishing media

: Water may cause spattering of hot material and may spread burning.

Special hazards arising from the substance or mixture / Conditions of flammability

: Not classified as flammable. Toxic fumes, gases or vapours may evolve on burning.

Flammability classification (OSHA 29 CFR 1910.106)

: Not classified as flammable.

Hazardous combustion products

: Carbon oxides; Formaldehyde; Metal oxides; Silicon oxides; Hydrogen fluoride; hydrogen cyanide; Fluorinated products.; Other unidentified organic compounds.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode.



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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

Personal precautions, protective equipment and emergency procedures

: Keep people away from and upwind of spill/leak. Wear appropriate protective equipment. Restrict access to area until completion of clean-up. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Prevent product from entering drains, sewers, waterways and soil.

Methods and material for containment and cleaning up

: Ventilate the area. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. Vacuum or sweep up spilled material using a method that does not generate airbourne dust. Keep in properly labelled containers. Contact the proper local authorities. For waste disposal, see Section 13 of the SDS.

Special spill response procedures

: If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).

US CERCLA Reportable quantity (RQ): None reportable.

In Canada: Contact appropriate local and provincial environmental authorities for assistance and/or reporting requirements.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

: Use with adequate ventilation. Wear suitable protective equipment during handling. Avoid breathing dust and fume. Avoid contact with skin, eyes and clothing. Keep away from extreme heat and direct flame. Keep away from incompatibles. Keep containers closed when not in use. Wash thoroughly after handling.

Conditions for safe storage :

Store in cool/well-ventilated place. Store locked up. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. Keep away from incompatibles.

Incompatible materials

: Strong oxidizing agents; Strong acids; Strong bases

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:					
Chemical Name	ACGIH 1	<u>rlv</u>	OSHA PEL		
	TWA	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>	
aluminum oxide	1 mg/m³ (respirable)	N/Av	15 mg/m³ (total dust); 5 mg/m³ (respirable)	N/Av	
Polydimethylsiloxane	N/Av	N/Av	N/Av	N/Av	

Exposure controls

Ventilation and engineering measures



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: Ensure adequate ventilation, especially in confined areas. 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 : In case of insufficient ventilation wear suitable respiratory equipment. If airbourne concentrations are above the permissible exposure limit or are not known, use

concentrations are above the permissible exposure limit or are not known, use NIOSH-approved respirators. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02. Seek advice from respiratory protection specialists.

Skin protection: Wear protective gloves. Advice should be sought from glove suppliers.

Eye / face protection: Wear safety goggles or glasses as appropriate for the job.

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

Other equipment may be required depending on workplace standards.

General hygiene considerations

: Avoid breathing dust and fume. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Remove and wash contaminated clothing before re-use.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Black solid.

Odour : No odour.

Odour threshold : N/Av

pH : N/Av

Melting Point/Freezing point : N/Av

Initial boiling point and boiling range

: N/Av
Flash point : >160°C
Flashpoint (Method) : Closed cup

Evaporation rate (BuAe = 1) : N/Av

Flammability (solid, gas) : Not considered flammable.

Lower flammable limit (% by vol.)

: N/Av

Upper flammable limit (% by vol.)

: N/Av

Oxidizing properties : None known.

Explosive properties : Not explosive

Vapour pressure : N/Av
Vapour density : N/Av
Relative density / Specific gravity

: 3.26

Solubility in water : Insoluble.

Other solubility(ies) : N/Av

Partition coefficient: n-octanol/water or Coefficient of water/oil distribution

: N/Av

Auto-ignition temperature : N/Av

Decomposition temperature : N/Av

Viscosity : N/Ap

Volatiles (% by weight) : <0.05%

Volatile organic Compounds (VOC's)

: <0.01 g/L



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Absolute pressure of container

: N/Ap

Flame projection length : N/Ap Other physical/chemical comments

: No additional information.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not normally reactive.

: Stable under normal conditions. Chemical stability

Possibility of hazardous reactions

: Hazardous polymerization does not occur. No dangerous reaction known under

conditions of normal use.

Conditions to avoid Direct sources of heat. Do not use in areas without adequate ventilation. Avoid contact

with incompatible materials. Avoid dust formation.

Incompatible materials : Strong oxidizing agents; Strong acids; Strong bases

Hazardous decomposition products

: None known, refer to hazardous combustion products in Section 5.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES Routes of entry skin & eye : YES **Routes of entry Ingestion** : YES Routes of exposure skin absorption

: NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

May cause mild respiratory irritation at higher temperatures. May cause coughing and breathing difficulties. 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.

Sign and symptoms ingestion

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Sign and symptoms skin : Causes little or no irritation.

: Causes little or no irritation. Direct eye contact may cause temporary redness. Sign and symptoms eyes

Potential Chronic Health Effects

: No hazards resulting from the material as supplied.

: No data available to indicate product or any components present at greater than 0.1% Mutagenicity

are mutagenic or genotoxic.

Carcinogenicity : Not classifiable as a human carcinogen. No components are listed as carcinogens by

ACGIH, IARC, OSHA or NTP.



Parker Hannifin Corp. **Chomerics Division** 77 Dragon Court Woburn, MA, USA, 01888

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Reproductive effects & Teratogenicity

: Not expected to cause reproductive effects.

Sensitization to material

: Not expected to be a skin or respiratory sensitizer.

Specific target organ effects: According to the classification criteria of U.S. OSHA regulations (29CFR 1910.1200)

(Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015), this product is not expected to cause target organ toxicity through

single or repeated exposures.

Medical conditions aggravated by overexposure

: Pre-existing skin, eye and respiratory disorders.

Synergistic materials

: None known or reported by the manufacturer.

Toxicological data : Not classified for acute toxicity based on available data. No data is available on the

product itself.

See below for individual ingredient acute toxicity data.

	LC₅₀(4hr)	LDs	50	
Chemical name	inh, rat	(Oral, rat)	(Rabbit, dermal)	
aluminum oxide	> 2.3 mg/L (dust) (No mortality)	> 2000 mg/kg (No mortality)	N/Av	
Polydimethylsiloxane	N/Av	> 2000 mg/kg	> 19 400 mg/kg	

Other important toxicological hazards

: None known or reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

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.

See the following tables for individual ingredient ecotoxicity data.

Ecotoxicity data:

<u>Ingredients</u>	040 N-	Toxicity to Fish				
	CAS No	LC50 / 96h	NOEC / 21 day	M Factor		
aluminum oxide	1344-28-1	> 100 mg/L (Brown trout)	N/Av	None.		
Polydimethylsiloxane	63148-62-9	350 mg/L Pleuronectes platessa (European plaice)	N/Av	None.		

<u>Ingredients</u>	CAS No	Toxi	city to Daphnia	a		
		EC50 / 48h	NOEC / 21 day	M Factor		
aluminum oxide	1344-28-1	> 100 mg/L (Daphnia magna)	N/Av	None.		
Polydimethylsiloxane	63148-62-9	> 200 mg/L (Daphnia magna)	N/Av	None.		



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<u>Ingredients</u>	CAS No	Toxicity to Algae				
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor		
aluminum oxide	1344-28-1	> 100 mg/L/72hr (Green algae) (Read-across)	N/Av	None.		
Polydimethylsiloxane	63148-62-9	N/Av	N/Av	None.		

Persistence and degradability

: No data is available on the product itself.

Contains the following chemicals which are not readily biodegradable:aluminum oxide.

Bioaccumulation potential

The product itself has not been tested. See the following data for ingredient

information.

<u>Components</u>	Partition coefficient n-octanol/water (log Kow)	Bioconcentration factor (BCF)
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Mobility in soil

: The product itself has not been tested.

Other Adverse Environmental effects

: No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal

: Handle in accordance with good industrial hygiene and safety practice. Refer to protective measures listed in sections 7 and 8. This material and its container must be disposed of in a safe way.

Methods of Disposal

 Dispose in accordance with all applicable federal, state, provincial and local regulations.

RCRA

: If the product becomes a waste, it may meet the criteria of a hazardous waste according to the US RCRA Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.



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SECTION 14. TRANSPORT INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
49CFR/DOT	None.	Not regulated.	not regulated	none	\otimes
49CFR/DOT Additional information	None.	!			
TDG	None.	Not regulated.	not regulated	none	\otimes
TDG Additional information	None.	!			
ICAO/IATA	None.	Not regulated.	not regulated	none	\otimes
ICAO/IATA Additional information	None.	!			
IMDG	None.	Not regulated.	not regulated	none	\otimes
IMDG Additional information	None.	!	<u> </u>		

Special precautions for user: Appropriate advice on safety must accompany the package.

Environmental hazards

This product does not meet the criteria for an environmentally hazardous mixture, according to the IMDG Code. See Section 12 for more environmental information.

Contains a chemical considered to be persistent.

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

: Not applicable.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

<u>Ingredients</u> C	TSCA		CERCLA Reportable	SARA TITLE III: Sec. 302, Extremely	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical		
	CAS#	Inventory	Quantity(RQ) (40 CFR 117.302): Hazardous Substance, 4 CFR 355:		Toxic Chemical	de minimus Concentration	
aluminum oxide	1344-28-1	Yes	None.	None.	Yes	1%	
Polydimethylsiloxane	63148-62-9	Yes	None.	None.	No	N/Ap	



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SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: None. Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS#	California Proposition 65		State "Right to Know" Lists					
	0710 !!	Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
aluminum oxide	1344-28-1	No	N/Ap	Yes	Yes	Yes	Yes	Yes	No
Polydimethylsiloxane	63148-62-9	No	N/Ap	No	No	No	No	No	No

Canadian Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

Canadian National Pollutant Release Inventory (NPRI): This product contains the following substances listed on the

aluminum oxide (Part 1, Group A Substance)

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

International Information:

Components listed below are present on the following International Inventory list:

Ingredients	CAS#	European EINECs	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	NewZealand IOC
aluminum oxide	1344-28-1	215-691-6	Present	Present	(1)-23	KE-01012	Present	May be used as a single component chemical under an appropriate group standard.
Polydimethylsiloxane	63148-62-9	Polymer	Present	Present	(7)-476	KE-31068	Present	HSR003036

SECTION 16. OTHER INFORMATION

Legend

: ACGIH: American Conference of Governmental Industrial Hygienists

AIHA: American Industrial Hygiene Association AICS: Australian Inventory of Chemical Substances

CA: California

CAS: Chemical Abstract Services

CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act

of 1980

CFR: Code of Federal Regulations CSA: Canadian Standards Association DOT: Department of Transportation EC50: Effective Concentration 50%

EINECS: European Inventory of Existing Commercial chemical Substances

EPA: Environmental Protection Agency



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HSDB: Hazardous Substances Data Bank

IARC: International Agency for Research on Cancer

IATA: International Air Transport Association

IBC: Intermediate Bulk Container

ICAO: International Civil Aviation Organisation IECSC: Inventory of Existing Chemical Substances IMDG: International Maritime Dangerous Goods

Inh: Inhalation

IOC: Inventory of Chemicals

KECI: Korean Existing Chemicals Inventory **KECL: Korean Existing Chemicals List**

LC: Lethal Concentration

LD: Lethal Dose MA: Massachusetts MN: Minnesota N/Ap: Not Applicable N/Av: Not Available

NDSL = Non-Domestic Substances List

NIOSH: National Institute of Occupational Safety and Health

NJ: New Jersev

NOEC: No observable effect concentration

NTP: National Toxicology Program

OECD: Organisation for Economic Co-operation and Development

OSHA: Occupational Safety and Health Administration

PA: Pennsylvania

PEL: Permissible exposure limit

PICCS: Philippine Inventory of Chemicals and Chemical Substances

PNOR: Particulates Not Otherwise Regulated PNOS: Particles Not Otherwise Specified RCRA: Resource Conservation and Recovery Act

RI: Rhode Island

RTECS: Registry of Toxic Effects of Chemical Substances SARA: Superfund Amendments and Reauthorization Act

SCBA: Self-Contained Breathing Apparatus

SDS: Safety Data Sheet

STEL: Short Term Exposure Limit

TDG: Canadian Transportation of Dangerous Goods Act & Regulations

TLV: Threshold Limit Values TWA: Time Weighted Average

WEEL: Workplace Environmental Exposure Level

WHMIS: Workplace Hazardous Materials Identification System

1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2018.

- 2. International Agency for Research on Cancer Monographs, searched 2019.
- 3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, 2019 (Chempendium, HSDB and RTECs).
- 4. Safety Data Sheets from manufacturer.
- 5. US EPA Title III List of Lists June 2019 version.
- 6. California Proposition 65 List September 2019 version.
- 7. OECD The Global Portal to Information on Chemical Substances eChemPortal, 2019.

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Other special considerations for handling

: Provide adequate information, instruction and training for operators.

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Prepared for:

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Parker Hannifin Corp. Chomerics Division 77 Dragon Court Woburn, MA, U.S.A. 01888 Telephone: (781) 935-4850



Prepared by:

ICC The Compliance Center Inc.
Telephone: (888) 442-9628 (U.S.): (888) 977-4834 (Canada) http://www.thecompliancecenter.com



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