SAFETY DATA SHEET

1. Identification

Product identifier **Permanent Metallic™ Block Seal Head Gasket Repair - 453 g**

Other means of identification

Product Code No. 74016 (Item# 1006217)

Recommended use Seal leaks in engine block

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufactured or sold by:

Company name CRC Canada Co.

Address 83 Galaxy Blvd
Unit 35 - 37
Toronto, ON M9W 5X6
Canada

Telephone

General Information 416-847-7750

24-Hour Emergency (CHEMTREC) 800-424-9300 (Canada)

Website www.crc-canada.ca

E-mail Support.CA@crcindustries.com

2. Hazard identification

Physical hazards Not classified.

Health hazards

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Carcinogenicity	Category 2

Environmental hazards

Hazardous to the aquatic environment, acute hazard	Category 3
Hazardous to the aquatic environment, long-term hazard	Category 3

Label elements

Signal word Warning

Hazard statement Causes skin irritation. Causes serious eye irritation. Suspected of causing cancer. Harmful to aquatic life with long lasting effects.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Avoid release to the environment.

Response IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF exposed or concerned: Get medical advice/attention.

Storage Store locked up.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
water		7732-18-5	60 - 80
sodium silicate		1344-09-8	15 - 40
cellulose		9004-34-6	1 - 5
bentonite		1302-78-9	0.1 - 1
Refractories, fibers, aluminosilicate		142844-00-6	0.1 - 1
sodium nitrate		7631-99-4	0.1 - 1

The exact percentage (concentration) of composition has been withheld as a trade secret.
All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions Move containers from fire area if you can do so without risk.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up Prevent product from entering drains.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.

Environmental precautions Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Should be handled in closed systems, if possible. Provide adequate ventilation. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
cellulose (CAS 9004-34-6)	TWA	10 mg/m3

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value	Form
cellulose (CAS 9004-34-6)	TWA	10 mg/m3	
Refractories, fibers, aluminosilicate (CAS 142844-00-6)	TWA	0.2 fibers/cm3	Fiber.
		5 mg/m3	Fiber, total
		5 mg/m3	Total particulate.

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value	Form
cellulose (CAS 9004-34-6)	TWA	3 mg/m3	Respirable fraction.
		10 mg/m3	Total dust.
Refractories, fibers, aluminosilicate (CAS 142844-00-6)	TWA	0.2 fibers/cm3	Fiber.
		5 mg/m3	Inhalable fibers.

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value	Form
cellulose (CAS 9004-34-6)	TWA	10 mg/m3	
Refractories, fibers, aluminosilicate (CAS 142844-00-6)	TWA	5 mg/m3	Inhalable fraction.

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value	Form
cellulose (CAS 9004-34-6)	TWA	10 mg/m3	
Refractories, fibers, aluminosilicate (CAS 142844-00-6)	TWA	0.5 fibers/cc	Respirable fibers.
		5 mg/m3	Inhalable fraction.

Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety)

Components	Type	Value	Form
cellulose (CAS 9004-34-6)	TWA	10 mg/m3	Total dust.
Refractories, fibers, aluminosilicate (CAS 142844-00-6)	TWA	1 fibers/cm3n	Fiber.
		10 mg/m3	fibers, total dust

Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21)

Components	Type	Value	Form
cellulose (CAS 9004-34-6)	15 minute	20 mg/m3	Fiber.
	8 hour	10 mg/m3	Fiber.
Refractories, fibers, aluminosilicate (CAS 142844-00-6)	15 minute	10 mg/m3	Inhalable fraction.
	8 hour	0.2 fibers/cc	Respirable fibers.
		5 mg/m3	Inhalable fraction.

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

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station. Eye wash fountain and emergency showers are recommended.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear protective gloves such as: Neoprene. Nitrile.

Other Wear appropriate chemical resistant clothing.

Respiratory protection If engineering controls are not feasible or if exposure exceeds the applicable exposure limits, use a NIOSH-approved cartridge respirator with an organic vapor cartridge. Use a self-contained breathing apparatus in confined spaces and for emergencies.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Observe any medical surveillance requirements. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state Liquid.

Form Liquid.

Color Reddish-brown.

Odor Odorless.

Odor threshold Not available.

pH 11.3

Melting point/freezing point 32 °F (0 °C) estimated

Initial boiling point and boiling range 212 °F (100 °C) estimated

Flash point None (Tag Closed Cup)

Evaporation rate Slow.

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Vapor pressure 2.3 hPa estimated

Vapor density > 1 (air = 1)

Relative density 1.37

Solubility(ies)

Solubility (water) Soluble.

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature	400 °F (204.4 °C) estimated
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Percent volatile	62.7 % estimated

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Reducing agents. Hydrofluoric acid.
Hazardous decomposition products	Nitrogen oxides (NOx). Sodium nitrite. Sodium oxides.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.
Ingestion	Health injuries are not known or expected under normal use.
Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity Not known.

Components	Species	Test Results
sodium nitrate (CAS 7631-99-4)		
Acute		
Dermal		
LD50	Rat	> 5000 mg/kg
Inhalation		
LC50	Rat	> 0.527 mg/l, 4 hours
Oral		
LD50	Rat	> 2000 mg/kg
		4.3 g/kg
sodium silicate (CAS 1344-09-8)		
Acute		
Oral		
Solid		
LD50	Rat	1500 - 3200 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.

Respiratory or skin sensitization

Canada - Alberta OELs: Irritant

cellulose (CAS 9004-34-6)	Irritant
Refractories, fibers, aluminosilicate (CAS 142844-00-6)	Irritant

Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Suspected of causing cancer.

ACGIH Carcinogens

Refractories, fibers, aluminosilicate (CAS 142844-00-6) A2 Suspected human carcinogen.

Canada - Alberta OELs: Carcinogen category

Refractories, fibers, aluminosilicate (CAS 142844-00-6) Suspected human carcinogen.

Canada - Manitoba OELs: carcinogenicity

Refractories, fibers, aluminosilicate (CAS 142844-00-6) Suspected human carcinogen.

Canada - Quebec OELs: Carcinogen category

Refractories, fibers, aluminosilicate (CAS 142844-00-6) Detected carcinogenic effect in animals.

IARC Monographs. Overall Evaluation of Carcinogenicity

Refractories, fibers, aluminosilicate (CAS 142844-00-6) 2B Possibly carcinogenic to humans.
sodium nitrate (CAS 7631-99-4) 2A Probably carcinogenic to humans.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

Chronic effects Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity Harmful to aquatic life with long lasting effects.

Components		Species	Test Results
bentonite (CAS 1302-78-9)			
Aquatic			
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	19000 mg/l, 96 hours
sodium nitrate (CAS 7631-99-4)			
Aquatic			
Fish	LC50	Bluegill (Lepomis macrochirus)	10000 mg/l, 96 hours
sodium silicate (CAS 1344-09-8)			
Aquatic			
Crustacea	EC50	Water flea (Ceriodaphnia dubia)	22.94 - 49.01 mg/l, 48 hours
Fish	LC50	Western mosquitofish (Gambusia affinis)	2320 mg/l, 96 hours
Acute			
Fish	LC50	Western mosquitofish (Gambusia affinis)	2320 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability

Bioaccumulative potential No data available.

Mobility in soil No data available.

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

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

TDG

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

15. Regulatory information

Canadian regulations This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.

Controlled Drugs and Substances Act

Not regulated.

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Precursor Control Regulations

Not regulated.

International regulations

Stockholm Convention

Not applicable.

Rotterdam Convention

Not applicable.

Kyoto protocol

Not applicable.

Montreal Protocol

Not applicable.

Basel Convention

Not applicable.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

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Further information CRC # 902A/1002894

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Revision information	Product and Company Identification: Product and Company Identification Accidental release measures: Personal precautions, protective equipment and emergency procedures Accidental release measures: Methods and materials for containment and cleaning up Handling and storage: Conditions for safe storage, including any incompatibilities Physical & Chemical Properties: Multiple Properties Physical and chemical properties: Oxidizing properties Physical and chemical properties: Explosive properties Transport Information: Agency Name, Packaging Type, and Transport Mode Selection GHS: Classification