SAFETY DATA SHEET

1. Identification

Product identifier	**Fuel Injector Cleaner**	
Other means of identification	NM0516-PRE2018	
Recommended use	Fuel Injector Cleaner	
Recommended restrictions	Not for food, drug, or household use.	
Manufacturer/Importer/Supplier/Distributor information		
Manufacturer		
Company name	Nemco Resources Ltd	
Address	25 Midland Street Winnipeg, MB R3E 3J6 Canada	
Telephone	Phone:	204-788-1030
	Fax:	204-788-1593
	Toll Free:	855-755-6737 (M-F 8am-4:30pm)
Website	www.nemco.ca/msds-safety-information	
E-mail	info@nemco.ca	
Emergency phone number	NEMCO:	855-755-6737 (M-F 8am-4:30pm)
Supplier	See above.	

2. Hazard identification

Physical hazards	Flammable liquids	Category 1
Health hazards	Serious eye damage/eye irritation	Category 2
	Specific target organ toxicity following single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity following single exposure	Category 3 narcotic effects
	Aspiration hazard	Category 1
Environmental hazards	Not classified.	

Label elements

Signal word	Danger
Hazard statement	Extremely flammable liquid and vapour. Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness. May be fatal if swallowed and enters airways.
Precautionary statement	
Prevention	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof electrical, ventilating and lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Wear protective gloves, protective clothing, eye protection and face protection. Wash thoroughly after handling. Avoid breathing mist or vapour. Use only outdoors or in a well-ventilated area.
Response	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. In case of fire: Use appropriate media to extinguish. 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 attention. IF INHALED: remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Do NOT induce vomiting.
Storage	Keep cool. Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	Dispose of container in accordance with local, regional, national and international regulations.
Other hazards	Combustible.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Isopropanol		67-63-0	60-80
Distillates (petroleum), light hydrotreated		64742-47-8	10-30
2-Pentanone, 4-hydroxy-4-methyl-		123-42-2	3-7

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Composition comments CANADA GHS: The exact percentage (concentration) of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation IF INHALED: remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE or doctor if you feel unwell.

Skin contact IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

Eye contact 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 attention.

Ingestion IF SWALLOWED: Immediately call a POISON CENTRE or doctor. Do NOT induce vomiting.

Most important symptoms/effects, acute and delayed Aspiration may cause pulmonary oedema and pneumonitis. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Symptoms may be delayed.

General information Take off all contaminated clothing immediately. If you feel unwell, seek medical advice (show the label where possible). Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse. Avoid contact with eyes and skin. Keep out of reach of children.

5. Fire-fighting measures

Suitable extinguishing media Water fog. Alcohol resistant foam. Dry chemical powder. Dry chemicals. Carbon dioxide.

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

Specific hazards arising from the chemical Vapours may form explosive mixtures with air. Vapours may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed.

Hazardous combustion products May include and are not limited to: Oxides of carbon.

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 In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Cool containers exposed to heat with water spray and remove container, if no risk is involved.

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

General fire hazards Extremely flammable liquid and vapour. Combustible.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapour. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. 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

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil etc) away from spilled material. Take precautionary measures against static discharge. Use only non-sparking tools.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. 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. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground. Do not discharge into lakes, streams, ponds or public waters.

7. Handling and storage

Precautions for safe handling

Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid contact with eyes. Avoid prolonged exposure. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Wash thoroughly after handling. Observe good industrial hygiene practices. When using do not eat or drink.

Conditions for safe storage, including any incompatibilities

Store locked up. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS). Keep out of reach of children.

8. Exposure controls/Personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
2-Pentanone, 4-hydroxy-4-methyl- (CAS 123-42-2)	TWA	50 ppm
Isopropanol (CAS 67-63-0)	STEL	400 ppm
	TWA	200 ppm

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

Components	Type	Value	Form
2-Pentanone, 4-hydroxy-4-methyl- (CAS 123-42-2)	TWA	238 mg/m3	
		50 ppm	
Distillates (petroleum), light hydrotreated (CAS 64742-47-8)	TWA	200 mg/m3	Vapour.
Isopropanol (CAS 67-63-0)	STEL	984 mg/m3 400 ppm	
	TWA	492 mg/m3 200 ppm	

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

Components	Type	Value	Form
2-Pentanone, 4-hydroxy-4-methyl- (CAS 123-42-2)	TWA	50 ppm	
Distillates (petroleum), light hydrotreated (CAS 64742-47-8)	TWA	200 mg/m3	Non-aerosol.
Isopropanol (CAS 67-63-0)	STEL	400 ppm	
	TWA	200 ppm	

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

Components	Type	Value
2-Pentanone, 4-hydroxy-4-methyl- (CAS 123-42-2)	TWA	50 ppm
Isopropanol (CAS 67-63-0)	STEL	400 ppm
	TWA	200 ppm

Canada. New Brunswick OELs: Threshold Limit Values (TLVs) Based on the 1991 and 1997 ACGIH TLVs and BEIs Publication (New Brunswick Regulation 91-191), as amended

Components	Type	Value
2-Pentanone, 4-hydroxy-4-methyl- (CAS 123-42-2)	TWA	238 mg/m3
		50 ppm
Isopropanol (CAS 67-63-0)	STEL	1230 mg/m3
		500 ppm
	TWA	983 mg/m3
		400 ppm

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

Components	Type	Value
2-Pentanone, 4-hydroxy-4-methyl- (CAS 123-42-2)	TWA	50 ppm
Isopropanol (CAS 67-63-0)	STEL	400 ppm
	TWA	200 ppm

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

Components	Type	Value
2-Pentanone, 4-hydroxy-4-methyl- (CAS 123-42-2)	TWA	238 mg/m3
		50 ppm
Isopropanol (CAS 67-63-0)	STEL	1230 mg/m3
		500 ppm
	TWA	985 mg/m3
		400 ppm

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

Components	Type	Value	Form
2-Pentanone, 4-hydroxy-4-methyl- (CAS 123-42-2)	15 minute	60 ppm	
	8 hour	50 ppm	
Distillates (petroleum), light hydrotreated (CAS 64742-47-8)	15 minute	250 mg/m3	Vapour.
	8 hour	200 mg/m3	Vapour.
Isopropanol (CAS 67-63-0)	15 minute	400 ppm	
	8 hour	200 ppm	

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Isopropanol (CAS 67-63-0)	40 mg/L	Acetone	Urine	*

* - For sampling details, please see the source document.

Exposure guidelines

Canada - Alberta OELs: Skin designation

Distillates (petroleum), light hydrotreated (CAS 64742-47-8)	Can be absorbed through the skin.

Canada - British Columbia OELs: Skin designation

Distillates (petroleum), light hydrotreated (CAS 64742-47-8)	Can be absorbed through the skin.

Canada - Saskatchewan OELs: Skin designation

Distillates (petroleum), light hydrotreated (CAS 64742-47-8)	Can be absorbed through the skin.

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 and safety shower.

Individual protection measures, such as personal protective equipment

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

Skin protection

Hand protection Impervious gloves. Confirm with reputable supplier first.

Other Wear appropriate chemical resistant clothing. As required by employer code.

Respiratory protection Where exposure guideline levels may be exceeded, use an approved NIOSH respirator. Respirator should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134), CAN/CSA-Z94.4 and ANSI's standard for respiratory protection (Z88.2).

Thermal hazards Not applicable.

General hygiene considerations When using do not smoke. 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. When using do not eat or drink.

9. Physical and chemical properties

Appearance	Liquid
Physical state	Liquid.
Form	Liquid.
Colour	Red
Odour	Alcohol
Odour threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	14.0 °C (57.2 °F)
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit – upper (%)	Not available.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	0.793
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

Other information

Explosive properties	Not explosive.
Kinematic viscosity	1.4586 cSt (@ 40°C)
Oxidising properties	Not oxidising.

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	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Do not mix with other chemicals.
Incompatible materials	Acids. Strong oxidising agents.
Hazardous decomposition products	May include and are not limited to: Oxides of carbon.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause drowsiness and dizziness. Headache. Nausea, vomiting. May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Causes serious eye irritation.
Ingestion	Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia. May cause stomach distress, nausea or vomiting.
Symptoms related to the physical, chemical and toxicological characteristics	Aspiration may cause pulmonary oedema and pneumonitis. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation.

Information on toxicological effects

Acute toxicity May be fatal if swallowed and enters airways. See below.

Components	Species	Test Results
2-Pentanone, 4-hydroxy-4-methyl- (CAS 123-42-2)		
Acute		
Dermal		
LD50	Rat	> 1875 mg/kg, 24 Hours, ECHA
Inhalation		
LC50	Rat	7600 mg/m³, 4 h, ECHA
Oral		
LD50	Rat	4000 mg/kg, ECHA
Distillates (petroleum), light hydrotreated (CAS 64742-47-8)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg, 24 Hours, ECHA
Inhalation		
LC50	Rat	> 5.3 mg/L, 4 Hours, ECHA
Oral		
LD50	Rat	> 5000 mg/kg, ECHA
Isopropanol (CAS 67-63-0)		
Acute		
Dermal		
LD50	Rabbit	16.4 ml/kg, 24 Hours, ECHA
Inhalation		
LC50	Rat	16970 mg/l/4h, HMIRA
Oral		
LD50	Rat	5840 mg/kg, ECHA

Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Exposure minutes	Not available.
Erythema value	Not available.

Oedema value	Not available.
Serious eye damage/eye irritation	Causes serious eye irritation.
Corneal opacity value	Not available.
Iris lesion value	Not available.
Conjunctival reddening value	Not available.
Conjunctival oedema value	Not available.
Recover days	Not available.

Respiratory or skin sensitisation

Canada - Alberta OELs: Irritant

2-Pentanone, 4-hydroxy-4-methyl- (CAS 123-42-2) Irritant

Respiratory sensitisation	Not a respiratory sensitizer.
Skin sensitisation	This product is not expected to cause skin sensitisation.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	Not classified.
Reproductive toxicity	Not applicable.
Specific target organ toxicity - single exposure	May cause respiratory irritation. May cause drowsiness and dizziness.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	May be fatal if swallowed and enters airways.
Chronic effects	Prolonged inhalation may be harmful.
Further information	Not available.

12. Ecological information

Ecotoxicity See below

Ecotoxicological data

Components		Species	Test Results
2-Pentanone, 4-hydroxy-4-methyl- (CAS 123-42-2)			
Aquatic			
Fish	LC50	Bluegill (Lepomis macrochirus)	420 mg/L, 96 hours
Distillates (petroleum), light hydrotreated (CAS 64742-47-8)			
Aquatic			
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	2.9 mg/L, 96 hours
Isopropanol (CAS 67-63-0)			
Algae	IC50	Algae	1000 mg/L, 72 Hours
Crustacea	EC50	Daphnia	13299 mg/L, 48 Hours
Aquatic			
Fish	LC50	Bluegill (Lepomis macrochirus)	> 1400 mg/L, 96 hours

Persistence and degradability	No data is available on the degradability of any ingredients in the mixture.
Bioaccumulative potential	
Mobility in soil	No data available.
Mobility in general	Not 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 container in accordance with local, regional, national and international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

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

General Canada: TDG Proof of Classification: Classification Method: Classified as per Part 2, Sections 2.1 – 2.8 of the Transportation of Dangerous Goods Regulations. If applicable, the technical name and the classification of the product will appear below.

Transportation of Dangerous Goods (TDG - Canada)

Basic shipping requirements:

UN number	UN1993
Proper shipping name	FLAMMABLE LIQUID, N.O.S.
Technical name	Isopropanol
Hazard class	3
Packing group	II

TDG

15. Regulatory information

Canadian federal 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.

Canada NPRI VOCs with Additional Reporting Requirements: Mass reporting threshold/Identification Number

Distillates (petroleum), light hydrotreated (CAS 64742-47-8)	1 TONNES
Isopropanol (CAS 67-63-0)	1 TONNES

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Precursor Control Regulations

Not regulated.

WHMIS status Hazardous

International regulations

Inventory status

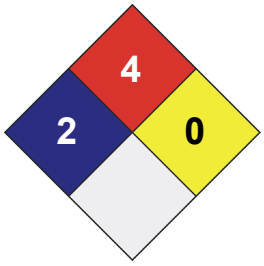
Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other information

LEGEND	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

HEALTH	* 2
FLAMMABILITY	4
PHYSICAL HAZARD	0
PERSONAL PROTECTION	X



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Other information For an updated SDS, please contact the supplier/manufacturer listed on the first page of the document.

Disclaimer

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