



## MATERIAL SAFETY DATA SHEET

*This Material Safety Data Sheet complies with the Canadian Controlled Product Regulations, the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, 29 CFR 1910.1200, the European Union Directives and the Japanese Industrial Standard JIS Z 7250*

### 1. Product and Supplier Identification

**Product:** Gel Cleaner

**Product Use:** Gel Residue Cleaner

**Producer:** Haigh Industries Inc.,  
106 – 2971 Viking Way,  
Richmond, B.C.  
Canada, V6V 1Y1

**Telephone:** (604) 278-5851  
**Facsimile:** (604) 278-5871  
**Emergencies (24-hour number):** +1(604) 986-4617

**Supplier:** As above

### 2. Composition

Component	% (w/w)	Exposure Limits (ACGIH)*	LD <sub>50</sub>	LC <sub>50</sub>
Isopropyl alcohol (CAS No 67-63-0) EU EINICS 200-661-7	82-94	200 ppm, Carcinogen A4, Not classifiable as a human carcinogen	4720 mg/kg (oral/rat)	17000ppm 4-hr exposure)
Ethyl acetate (CAS No. 141-78-6) EU EINICS 205-500-4	7-14	TLV-TWA: 400 ppm, irritation	10200 mg/kg (oral/rat)	19600 ppm (4-hr exposure)
Non-hazardous ingredients and ingredients below disclosure requirements	≤ 0.01	Not applicable	Not applicable	Not applicable

\* Exposure limits may vary from time to time and from one jurisdiction to another. Check with local regulatory agency for the exposure limits in your area.

ACGIH , American Conference of Governmental Industrial Hygienists.

### 3. Hazards Identification

#### Primary Routes of Entry:

Skin Contact:	Yes
Skin Absorption:	No
Eye Contact:	Yes
Ingestion:	No
Inhalation:	Yes

**Emergency Overview:** Clear colourless liquid with a sharp musty odour of rubbing alcohol. Vapour and liquid are flammable. Vapours are heavier than air and may spread long distances. Distant ignition sources and flashbacks may be possible. Mild central nervous system depressant. High vapour concentrations may cause headache, nausea, dizziness, incoordination and confusion. Aspiration hazard, if ingested.

#### Effects of Short-Term (Acute) Exposure:

**Inhalation:** Exposure to 400 ppm for 3 to 5 minutes caused irritation to the nose and throat in humans. Symptoms such as tension, tiredness, complaints and annoyance have also been reported during 4 to 8 hour exposures to 400 ppm. Severe exposures may produce signs of central nervous system depression such as shortness of breath, headache, drowsiness and dizziness.

**Skin Contact:** Testing on human volunteers shows no evidence of irritation. There have been reports of children becoming sick after dermal exposure.

**Eye Contact:** This product is a mild eye irritant, based on animal data. The vapour has produced eye irritation in humans at 400 ppm, with objectionable irritation at 800 ppm.

**Ingestion:** This product is not extremely toxic by ingestion. If ingested, this product may cause nausea, vomiting, shortness of breath, headache, drowsiness, dizziness and other signs of central nervous system depression. These adverse effects may be the result of ethyl alcohol being in the bloodstream as a metabolism byproduct. Ingestion is not a normal route of entry.

**Effects of Long-Term (Chronic) Exposure:** This product contains an ingredient which has been known to cause skin sensitization in some people. Sensitization may occur after prolonged or repeated exposures to this product. Prolonged contact with skin may defat tissue causing dermatitis or aggravate existing skin problems.

**Medical Conditions Aggravated By Exposure:** Persons susceptible to skin problems may find that the use of this product will cause increased symptoms of existing skin problems.

## 4. First Aid Measures

**Overview:** This product is flammable and before attempting any first aid procedure, ensure your own safety by removing ignition sources and ensuring adequate ventilation.

**Eye Contact:** Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 5 to 10 minutes or until the chemical is removed, while holding the eyelid(s) open. Obtain medical attention immediately or transport to a medical facility and continue to flush the eyes en route.

**Skin Contact:** Remove contaminated clothing. Wash gently and thoroughly with water and non-abrasive soap for at least 20 minutes or until chemical is removed. If signs of sensitization or irritation occur, obtain medical advice. Completely decontaminate clothing, shoes and leather goods before re-use or discard.

**Inhalation:** Remove source of contamination or move victim to fresh air. If breathing is difficult, oxygen may be beneficial if administered by trained personnel, preferably on a doctor's advice. DO NOT allow the victim to move about unnecessarily.

**Ingestion:** Ingestion unlikely. Never give anything by mouth if victim is rapidly losing consciousness. Have victim rinse mouth thoroughly with water. **Do not induce vomiting.** Dilute contents of stomach with 240 to 300 ml of water. If vomiting occurs naturally have victim lean forward to reduce risk of aspiration. Seek immediate medical attention.

## 5. Fire Fighting Measures

**Flash point:** -4.4°C TCC (ethyl acetate)

**Autoignition temperature:** 399°C (isopropyl alcohol)

**Lower Explosive Limit:** 2 %

**Upper Explosion Limit:** 12%

**Sensitivity to Impact:** No

**Sensitivity to Static Discharge:** Vapours may be ignited by static discharge.

**Hazardous Combustion Products:** Carbon dioxide, carbon monoxide, oxides of nitrogen, undetermined organic compounds in acid smoke.

**Extinguishing Media:** Dry chemical, carbon dioxide, alcohol foam or polymer foam. Water may be ineffectual because it will not cool ethyl acetate below its flash point. Fire fighting foams are the extinguishing media of choice.

**Fire Fighting Instructions:** Evacuate area and fight fire from a safe distance or protected location. Approach the fire from upwind to avoid contact with hazardous vapours and decomposition products. Do not enter fire area without proper protection. Use of water, although generally ineffective, may be used by firefighters trained in fighting flammable liquid fires.

Isolate material not yet involved in the fire and protect personnel. Move containers away from fire, if safe to do so.

**NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) HAZARD INDEX:**

HEALTH: 2

FLAMMABILITY: 3

REACTIVITY: 0

## 6. Accidental Release Measures

**Overview:** Restrict access to spill area until completion of cleanup. Ensure cleanup is conducted by trained personnel only. Extinguish all ignition sources and ventilate area. Wear protective equipment before attempting clean up.

**Personal Protection:** See Section 8

**Environmental Precautions:** Dilute aqueous solutions may biodegrade. Concentrated material may overload/poison plant biomass. Ensure that any release of this material is contained to prevent leakage into waterways and sanitary sewers.

**Remedial Measures:** Do not touch spilled material and prevent material from entering sewers, waterways or confined spaces. Stop or reduce leak, if safe to do so. Contain spill with absorbent material which does not react with the product (vermiculite). Place in suitable, covered, labeled containers. Flush area with water. Contaminated absorbent may exhibit the same hazards as the spilled product.

## 7. Handling and Storage

**Handling Procedures:** This product is extremely flammable. Before handling, it is very important that engineering controls are operating and protective equipment requirements and personal hygiene measures are followed. People working with this product should be trained regarding the hazards and safe handling.

Eliminate all ignition sources and keep away from heat. Ventilation systems should be non-sparking and approved explosion proof. Do not use with incompatible materials such as strong acids, bases, or oxidizing materials. Wear proper protective equipment when handling this material.

**Storage:** Store in a cool, dry, well-ventilated area, out of direct sunlight and away from heat and ignition sources. Keep storage area clear of burnable materials. Store away from oxidizers, corrosives, and other incompatible materials such as lithium aluminum hydride. Keep containers closed when not in use.

## 8. Exposure Controls, Personal Protection

**Engineering Controls:** When using indoors, ensure adequate ventilation by using local exhaust. Mechanical ventilation is recommended for all indoor situations to control fugitive emissions. Electrical and mechanical equipment should be explosion proof.

**Respiratory Protection:** Vapours will be generated particularly if product is atomized, or heated. If used or sprayed in an enclosed area, at a minimum use a NIOSH approved organic vapour respirator. When cartridge type respirators are used, ensure that the cartridges are changed frequently according to the manufacturer's recommendations. Respirator selection must be done

by a qualified person and be based upon a risk assessment of the work activities and exposure levels. Respirators must be fit tested and users must be clean shaven where the respirator seals to face. Exposure must be kept at or below the applicable exposure limits and the maximum use concentration of the respirator must not be exceeded.

**Skin protection:** Depending upon the conditions of use, protective gloves and clothing to prevent skin contact.

**Eye and Face Protection:** Chemical splash goggles and/or face shield must be worn when a possibility exists for eye contact due to spashing or spraying liquid. Contact lenses should not be worn.

**Footwear:** No specific recommendation.

**Other:** Emergency eyes wash fountains should be available in vicinity of use.

## 9. Physical and Chemical Properties

**Appearance:** Clear liquid

**Odour:** Rubbing alcohol odour

**Odour Threshold:** 2 ppm (detection)

**pH:** Not applicable

**Vapour Pressure:** 9.73 kPa @ 20°C  
(ethyl acetate)

**Solubility:** Partially soluble

**Vapour Density:** 2.07 (air =1),  
(isopropyl alcohol)

**Freezing Point:** -88°C (isopropyl alcohol)

**Boiling Point:** 77.5°C (ethyl acetate)

**Critical Temperature:** 235.2 °C

(isopropyl alcohol)

**Relative Density:** 0.791 @ 25°C

**Evaporation Rate:** 6.2 (butyl acetate=1)

**Partition Coefficient:** Log P(oct) = 0.05  
(isopropyl alcohol)

**Solvent Solubility:** soluble in ethanol,  
acetone, chloroform diethyl ether, and  
benzene

## 10. Stability and Reactivity

**Chemical Stability:** Stable as supplied. Slowly hydrolyzes into ethanol and acetic acid in the presence of water.

**Incompatibility:** Yes. Keep away from strong oxidizers, corrosives and lithium aluminum hydride.

**Hazardous Decomposition Products:** ethanol, acetic acid, unstable peroxides.

**Hazardous Polymerization:** Will not occur.

## 11. Toxicological Information

**Acute Exposure:** See Section 3

**Chronic Exposure:** See Section 3.

**Exposure Limits:** See Section 2.

**Irritancy:** See Section 3.

**Sensitization:** See Section 3.

**Carcinogenicity:** No human or animal data is available. IARC has designated this material A4, not classifiable as a human carcinogen.

**Teratogenicity:** Isopropyl alcohol has produced fetotoxicity in rats (maternal)

**Reproductive toxicity:** No human information available.

**Mutagenicity:** No human information available.

**Synergistic products:** In one study, the combination of ethyl acetate and formaldehyde was more acutely toxic in an animal study. Also isopropyl alcohol

can enhance the toxicity of carbon tetrachloride, 1,1,2-trichloroethane, chloroform, trichloroethylene, and dimethylnitrosamine.

## 12. Ecological Information

### Environmental toxicity:

Isopropyl alcohol:	LC <sub>50</sub> Pimephales promelas (fathead minnow) 11,800 mg/l / 1 hour
	LC <sub>50</sub> Pimephales promelas (fathead minnow) 11,160 mg/l / 24 hour
Ethyl acetate:	LC <sub>50</sub> Pimephales promelas (fathead minnow) 230 mg/l / 96 hour
	EC <sub>50</sub> Pimephales promelas (fathead minnow) 220 mg/l / 96 hour

**Biodegradability:** Dilute aqueous dispersions may biodegrade.

## 13. Disposal Considerations

Review federal, provincial or state, and local government requirements prior to disposal. Store material for disposal as indicated in Storage Conditions. Disposal by controlled incineration or by secure land fill may be acceptable.

## 14. Transport Information

**Transport of Dangerous Goods (TDG and CLR):** Packagings ≤ 1 litre may be shipped as limited quantities, or consumer commodities. Containers ≥ 1 litre must be shipped as; UN 1993, FLAMMABLE LIQUID, N.O.S.(Isopropyl alcohol), Class 3, PG II

**United States Department of Transport (49CFR):** Packagings ≤ 1 litre may be shipped as limited quantities, or consumer commodities (ORM-D). Containers ≥ 1 litre must be shipped as; Flammable Liquid, n.o.s. (Isopropyl alcohol), Class 3, UN 1993, PG II

**International Air Transport Association (IATA):** UN 1993, Flammable Liquid, n.o.s. (Isopropyl alcohol), Class 3, PG II

**International Maritime Organization (IMO):** UN 1993, Flammable Liquid, n.o.s. (Isopropyl alcohol), Class 3, PG II, Flash Point = -4.4°C  
EmS No: F-E, S-E  
Stowage Category "A" (for limited quantities)  
Stowage Category "B"

## 15. Regulatory Information

### CANADIAN FEDERAL REGULATIONS:

**CEPA, DOMESTIC SUBSTANCES LIST:** Listed

**WHMIS CLASSIFICATION:** B2, D2B

### UNITED STATES – FEDERAL REGULATIONS:

**TOXIC SUBSTANCES CONTROL ACT (TSCA):** All components are listed in the inventory.

**OSHA, 29 CFR 1910, Subpart Z:** Meets criteria for a hazardous substance. Air contamination  
Limits, 400 ppm, ceiling

**CALIFORNIA Proposition 65, Safe Drinking Water and Toxicity Enforcement Act, 1986:**

No substances listed

**CERCLA, 40 CFR 302:** Ethyl acetate, isopropyl alcohol, Category D, RQ= 2270 Kg

**SARA 302, 40 CFR 355:** No ingredients are listed.

**SARA 313, 40 CFR 372:** No ingredients are subject to the reporting requirements.

**SARA 311/312, 40 CFR 370:** Immediate (Acute) Health, Fire

**EUROPEAN UNION DIRECTIVES:**

**CLASSIFICATION:** Flammable. Harmful. Irritant. [F;Xi, Xn]

**RISK PHRASES:** Highly flammable, irritating to eyes, repeated exposure may cause skin dryness or cracking, vapours may cause drowsiness and dizziness. Harmful if ingested.

[F: R11, Xi R22,36,66,67]

**SAFETY PHRASES:** Keep out of reach of children, keep away from sources of ignition, in case of contact with eyes, rinse immediately with plenty of water and seek medical advice, and take precautionary measures against static discharge. Keep container tightly closed. Avoid contact with skin and eyes. [S(2), 7,16, 24/25,26,33]

**COMMENTS:** None.

**LABEL :**



## 16. Other Information

**Original Preparation Date:** May 16, 2006

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**Revisions:** Reviewed and re-issued December 4, 2009