

SAFETY DATA SHEET

1. Identification

Product identifier	Reagent alcohol (200 proof)
Other means of identification	None.
Recommended use	General purpose solvent.
Recommended restrictions	Refer to the alcohol control authority in which the product is to be used - Canada Revenue Agency (Excise) in Canada, US Tax and Trade Bureau in the US, etc.
Manufacturer/Importer/Supplier/Distributor information	
Company name	Greenfield Global Inc.
Address	6985 Financial Drive Mississauga, Ontario L5N 0G3 Canada
Telephone	(905) 790-7500
Website	http://www.greenfield.com
Emergency phone number	CANUTEC: (613) 996-6666

2. Hazard identification

Physical hazards	Flammable liquids	Category 2
Health hazards	Serious eye damage/eye irritation	Category 2
	Specific target organ toxicity following single exposure	Category 1 (central nervous system, optic nerve)

Label elements



Signal word	Danger
Hazard statement	Highly flammable liquid and vapour. Causes serious eye irritation. Causes damage to organs (central nervous system, optic nerve).
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/lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Do not breathe mist/vapours. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection.
Response	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Call a POISON CENTRE/doctor. If eye irritation persists: Get medical advice/attention. In case of fire: Use water fog, alcohol-resistant foam, dry chemical powder, carbon dioxide to extinguish.
Storage	Store in a well-ventilated place. Keep cool. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Supplemental information	None.
Other hazards	None known.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Ethanol		64-17-5	90.93
Methanol		67-56-1	4.57
Propan-2-ol		67-63-0	5

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	Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical attention if irritation develops and persists.
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	Call a physician or poison control centre immediately. Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
Most important symptoms/effects, acute and delayed	Narcosis. Headache. Behavioural changes. Decrease in motor functions. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Coughing. Methanol: Human exposure to methanol may result in illness, systemic poisoning, blindness, optic nerve damage and perhaps death, after being ingested, absorbed through the skin or inhaled. Death due to cardiac or respiratory failure has been reported in some cases from consumption of as little as 30 mls.
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. Keep victim under observation. Symptoms may be delayed.
General information	Take off all contaminated clothing immediately. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Alcohol resistant foam. Dry chemical powder. Carbon dioxide (CO ₂).
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. Combustion products may include: Carbon oxides.
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. Use water spray to keep fire-exposed containers cool.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Highly flammable liquid and vapour.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist/vapours. 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.
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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. 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. Avoid discharge into drains, water courses or onto the ground.

Environmental precautions**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. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Do not breathe mist/vapours. Avoid contact with eyes. Avoid prolonged exposure. When using, do not eat, drink or smoke. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. 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).

8. Exposure controls/personal protection**Occupational exposure limits****US. ACGIH Threshold Limit Values**

Components	Type	Value
Ethanol (CAS 64-17-5)	STEL	1000 ppm
Methanol (CAS 67-56-1)	STEL	250 ppm
	TWA	200 ppm
Propan-2-ol (CAS 67-63-0)	STEL	400 ppm
	TWA	200 ppm

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

Components	Type	Value
Ethanol (CAS 64-17-5)	TWA	1880 mg/m ³
		1000 ppm
Methanol (CAS 67-56-1)	STEL	328 mg/m ³
		250 ppm
	TWA	262 mg/m ³
		200 ppm
Propan-2-ol (CAS 67-63-0)	STEL	984 mg/m ³
		400 ppm
	TWA	492 mg/m ³
		200 ppm

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

Components	Type	Value
Ethanol (CAS 64-17-5)	STEL	1000 ppm
Methanol (CAS 67-56-1)	STEL	250 ppm
	TWA	200 ppm
Propan-2-ol (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
Ethanol (CAS 64-17-5)	STEL	1000 ppm
Methanol (CAS 67-56-1)	STEL	250 ppm
	TWA	200 ppm
Propan-2-ol (CAS 67-63-0)	STEL	400 ppm
	TWA	200 ppm

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

Components	Type	Value
Ethanol (CAS 64-17-5)	STEL	1000 ppm
Methanol (CAS 67-56-1)	STEL	250 ppm
	TWA	200 ppm
Propan-2-ol (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
Ethanol (CAS 64-17-5)	TWA	1880 mg/m3
		1000 ppm
Methanol (CAS 67-56-1)	STEL	328 mg/m3
		250 ppm
	TWA	262 mg/m3
		200 ppm
Propan-2-ol (CAS 67-63-0)	STEL	1230 mg/m3
		500 ppm
	TWA	983 mg/m3
		400 ppm

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

Components	Type	Value
Ethanol (CAS 64-17-5)	15 minute	1250 ppm
	8 hour	1000 ppm
Methanol (CAS 67-56-1)	15 minute	250 ppm
	8 hour	200 ppm
Propan-2-ol (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
Methanol (CAS 67-56-1)	15 mg/l	Methanol	Urine	*
Propan-2-ol (CAS 67-63-0)	40 mg/l	Acetone	Urine	*

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

Exposure guidelines**Canada - Alberta OELs: Skin designation**

Methanol (CAS 67-56-1) Can be absorbed through the skin.

Canada - British Columbia OELs: Skin designation

Methanol (CAS 67-56-1) Can be absorbed through the skin.

Canada - Manitoba OELs: Skin designation

Methanol (CAS 67-56-1) Danger of cutaneous absorption

Canada - Ontario OELs: Skin designation

Methanol (CAS 67-56-1) Can be absorbed through the skin.

Canada - Quebec OELs: Skin designation

Methanol (CAS 67-56-1)

Can be absorbed through the skin.

Canada - Saskatchewan OELs: Skin designation

Methanol (CAS 67-56-1)

Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Methanol (CAS 67-56-1)

Danger of cutaneous absorption

Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation 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). Chemical goggles are recommended.

Skin protection**Hand protection**

Suitable gloves can be recommended by the glove supplier. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Wear appropriate chemical resistant gloves.

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Respirator type: Chemical respirator with organic vapour cartridge and full facepiece. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

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.

9. Physical and chemical properties**Appearance****Physical state**

Liquid.

Form

Liquid.

Colour

Clear liquid; invisible vapour.

Odour

Sweet. Alcoholic odor.

Odour threshold

Not available.

pH

Not available.

Melting point/freezing point

-130 - -114 °C (-202 - -173.2 °F)

Initial boiling point and boiling range

78 °C (172.4 °F)

Flash point

14 - 17 °C (57.2 - 62.6 °F) Closed cup

Evaporation rate

Expected to be rapid.

Flammability (solid, gas)

Not applicable.

Upper/lower flammability or explosive limits**Explosive limit - lower (%)**

3.3 % v/v (Ethanol)

Explosive limit – upper (%)

24.5 % v/v (Ethanol)

Vapour pressure

44.6 mm Hg (20 °C (68 °F))

Vapour density

1.6 (Air = 1)

Relative density

0.785 (25 °C (77 °F))

Solubility(ies)**Solubility (water)**

Complete

Partition coefficient (n-octanol/water)

Not available.

Auto-ignition temperature

363 °C (685.4 °F) (Ethanol)

Decomposition temperature

Not available.

Viscosity Not available.

Other information

Explosive properties Not explosive.

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 Hazardous polymerisation does not occur.

Conditions to avoid Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.

Incompatible materials Acids. Strong oxidising agents. Chlorine. Isocyanates.

Hazardous decomposition products No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation May cause damage to organs by inhalation. Prolonged inhalation may be harmful.

Skin contact May be absorbed through the skin. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.

Eye contact Causes serious eye irritation.

Ingestion Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics Narcosis. Headache. Behavioural changes. Decrease in motor functions. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Coughing. Methanol: Human exposure to methanol may result in illness, systemic poisoning, blindness, optic nerve damage and perhaps death, after being ingested, absorbed through the skin or inhaled. Death due to cardiac or respiratory failure has been reported in some cases from consumption of as little as 30 mls.

Information on toxicological effects

Acute toxicity May be harmful if swallowed.

Components	Species	Test Results
Ethanol (CAS 64-17-5)		
Acute		
Inhalation		
<i>Vapour</i>		
LC50	Rat	117 - 125 mg/l, 4 Hours
Oral		
LD50	Rat	10470 mg/kg
Propan-2-ol (CAS 67-63-0)		
Acute		
Dermal		
LD50	Rabbit	12870 mg/kg
Inhalation		
<i>Vapour</i>		
LC50	Rat	72.6 mg/l, 4 hours
Oral		
LD50	Rat	4710 mg/kg
Skin corrosion/irritation		Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation		Causes serious eye irritation.
Respiratory or skin sensitisation		
Respiratory sensitisation		Not a respiratory sensitiser.
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

ACGIH Carcinogens

Ethanol (CAS 64-17-5) A3 Confirmed animal carcinogen with unknown relevance to humans.
 Propan-2-ol (CAS 67-63-0) A4 Not classifiable as a human carcinogen.

Canada - Manitoba OELs: carcinogenicity

Ethanol (CAS 64-17-5) Confirmed animal carcinogen with unknown relevance to humans.
 Propan-2-ol (CAS 67-63-0) Not classifiable as a human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

Propan-2-ol (CAS 67-63-0) 3 Not classifiable as to carcinogenicity to humans.

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

Specific target organ toxicity - single exposure Causes damage to organs (central nervous system, optic nerve).

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components		Species	Test Results
Ethanol (CAS 64-17-5)			
Aquatic			
<i>Acute</i>			
Algae	EC10	Freshwater algae	11.5 mg/l, 72 hours
	EC50	Freshwater algae	275 mg/l, 72 hours
		Marine water algae	1900 mg/l
Fish	LC50	Freshwater fish	11200 mg/l, 24 hours
Invertebrate	EC50	Freshwater invertebrate	5012 mg/l, 48 hours
		Marine water invertebrate	857 mg/l, 48 hours
Other	EC50	Lemna minor	4432 mg/l, 7 days
<i>Chronic</i>			
Algae	NOEC	Marine water algae	1580 mg/l
Fish	NOEC	Freshwater fish	250 mg/l
Invertebrate	NOEC	Freshwater invertebrate	9.6 mg/l, 10 days
		Marine water invertebrate	79 mg/l, 96 hours
Other	NOEC	Lemna minor	280 mg/l, 7 days
Other			
<i>Acute</i>			
Micro-organisms	LC50	Micro-organisms	5800 mg/l, 4 hours
Terrestrial			
<i>Acute</i>			
Plant	EC50	Terrestrial plant	633 mg/kg dw
Methanol (CAS 67-56-1)			
Aquatic			
<i>Acute</i>			
Crustacea	EC50	Daphnia magna	> 10000 mg/l, 48 hours
Fish	LC50	Bluegill (Lepomis macrochirus)	15400 mg/l, 96 hours

Components	Species	Test Results
Propan-2-ol (CAS 67-63-0)		
Aquatic		
<i>Acute</i>		
Crustacea	LC50	Daphnia magna > 10000 mg/l, 24 hours
Fish	LC50	Pimephales promelas 9640 mg/l, 96 hours
<i>Chronic</i>		
Crustacea	EC50	Daphnia magna > 100 mg/l, 21 days
	NOEC	Daphnia magna 141 mg/l, 16 days
		30 mg/l, 21 days

Persistence and degradability The product is expected to be biodegradable.

Bioaccumulative potential The product is not expected to bioaccumulate.

Partition coefficient n-octanol / water (log Kow)

Methanol (CAS 67-56-1)	-0.77
Propan-2-ol (CAS 67-63-0)	0.05

Mobility in soil Expected to be mobile in soil.

Other adverse effects The product contains volatile organic compounds which have a photochemical ozone creation potential.

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.

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 Dispose of in accordance with local regulations. 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

TDG

UN number	UN1986
UN proper shipping name	ALCOHOLS, FLAMMABLE, TOXIC, N.O.S. (Ethanol; Methanol)
Transport hazard class(es)	
Class	3
Subsidiary risk	6.1
Packing group	II
Environmental hazards	No.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number	UN1986
UN proper shipping name	Alcohols, flammable, toxic, n.o.s. (Ethanol; Methanol)
Transport hazard class(es)	
Class	3
Subsidiary risk	6.1
Packing group	II
Environmental hazards	No.
ERG Code	3HP
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1986
UN proper shipping name	ALCOHOLS, FLAMMABLE, TOXIC, N.O.S. (Ethanol; Methanol)
Transport hazard class(es)	
Class	3
Subsidiary risk	6.1

Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-E, S-D
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

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.

Ontario. Toxic Substances. Toxic Reduction Act, 2009. Regulation 455/09 (July 1, 2011)

Methanol (CAS 67-56-1)

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 Industrial Chemicals (AICIS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
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

Issue date 09-November-2021

Revision date

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Version No.

01

Disclaimer

This product is subject to Greenfield Global Inc.'s terms and conditions, which can be found at <http://www.greenfield.com/tc-po-can/>. The information in this SDS is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. The information in this safety data sheet must be regarded as a description of the safety requirements relating to the material and not as a guarantee of the properties thereof. No warranty guarantee or representation is made to its accuracy, reliability, or completeness. It is the user's responsibility to satisfy itself as to the suitability of such information for its own particular use. This information relates only to the specific product designated and may not be valid for such product used in combination with any other materials or in any process. It is at all times the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations applicable to the use, storage, or handling of the product. THE COMPANY MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, COURSE OF PERFORMANCE, OR USAGE OF TRADE, ALL OF WHICH ARE EXPRESSLY DISCLAIMED. Given the variety of factors that can affect the use and application of the product, which are uniquely within the user's knowledge and control, it is essential that the user evaluate the product to independently determine whether it is fit for a particular purpose, suitable, safe, and/or lawful for user's method of use or application.