# SAFETY DATA SHEET

## 1. Identification

**Product identifier** **Ethyl Alcohol (95% VOL)**

**Other means of identification**

**Synonyms** Ethanol, Alcohol, Ethyl Alcohol 190 US proof, Ethyl Alcohol DPS (95%), Ethyl Alcohol DS (95%), Ethyl Alcohol VS (95%)

**Recommended use** General purpose organic solvent, aerosols, cosmetics, pharmaceuticals, etc.

**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
Missisauga, Ontario L5N 0G3
Canada

**Telephone** (905) 790-7500

**Website** http://www.greenfield.com

**Emergency phone number** CHEMTREC: 1-800-424-9300

## 2. Hazard identification

**Physical hazards** Flammable liquids Category 2

**Health hazards** Serious eye damage/eye irritation Category 2

**Label elements**

**Signal word** Danger

**Hazard statement** Highly flammable liquid and vapour. Causes serious eye irritation.

**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. Wash thoroughly after handling. 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 eye irritation persists: Get medical advice/attention. In case of fire: Use appropriate media to extinguish.

**Storage** Store in a well-ventilated place. Keep cool.

**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 | 92.41 |

| | |
|---|---|
| **Composition comments** | All concentrations are in percent by weight.<br>Components not listed are either non-hazardous or are below reportable limits. |

## 4. First-aid measures

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| **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** | Rinse mouth. Get medical attention if symptoms occur. |
| **Most important symptoms/effects, acute and delayed** | Headache. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Coughing. |
| **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. 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

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| **Suitable extinguishing media** | Water fog. Alcohol resistant 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** | 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. |
| **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. |
| **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

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| **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 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. This product is miscible in water.<br><br>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.<br><br>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.<br><br>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. |

## 7. Handling and storage

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| **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. When using do not smoke. 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. Avoid contact with eyes. Avoid prolonged exposure. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. |

**Conditions for safe storage, including any incompatibilities**

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 |

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

| Components | Type | Value |
|---|---|---|
| Ethanol (CAS 64-17-5) | TWA | 1880 mg/m3 |
| | | 1000 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 |

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

| Components | Type | Value |
|---|---|---|
| Ethanol (CAS 64-17-5) | STEL | 1000 ppm |

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

| Components | Type | Value |
|---|---|---|
| Ethanol (CAS 64-17-5) | STEL | 1000 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 |

**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 |

**Biological limit values**

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

**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).

**Skin protection**

**Hand protection**

Wear appropriate chemical resistant gloves. Butyl rubber or Viton® gloves are recommended. Other suitable gloves can be recommended by the glove supplier. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.

**Other**

Wear appropriate chemical resistant clothing.

**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.

**Thermal hazards**

Wear appropriate thermal protective clothing, when necessary.

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| **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

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|---|---|
| **Appearance** | |
| **Physical state** | Liquid. |
| **Form** | Liquid. |
| **Colour** | Colourless. |
| **Odour** | Alcoholic. |
| **Odour threshold** | Not available. |
| **pH** | Not available. |
| **Melting point/freezing point** | -115 °C (-175 °F) (Approximate) |
| **Initial boiling point and boiling range** | 78.3 - 100 °C (172.94 - 212 °F) |
| **Flash point** | 16 °C (60.8 °F) Tag closed cup (ASTM D56) |
| **Evaporation rate** | 1.7 (Butyl acetate = 1) (Ethanol) |
| **Flammability (solid, gas)** | Not applicable. |
| **Upper/lower flammability or explosive limits** | |
| **Explosive limit - lower ( %)** | 3.3 % (Ethanol) |
| **Explosive limit – upper (%)** | 19 % (Ethanol) |
| **Vapour pressure** | 44 mm Hg @ 20 °C (Ethanol) |
| **Vapour density** | 1.56 (Air = 1) |
| **Relative density** | 0.81 (20 °C (68 °F)) |
| **Solubility(ies)** | |
| **Solubility (water)** | Complete |
| **Partition coefficient (n-octanol/water)** | 0.032 (Approximate) |
| **Auto-ignition temperature** | 370 °C (698 °F) (Approximate) |
| **Decomposition temperature** | Not available. |
| **Viscosity** | Not available. |
| **Other information** | |
| **Dynamic viscosity** | 1.35 cP (Approximate) (20 °C (68 °F)) |
| **Explosive properties** | Not explosive. |
| **Oxidising properties** | Not oxidising. |
| **Percent volatile** | 100 % v/v |

## 10. Stability and reactivity

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|---|---|
| **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** | Avoid heat, sparks, open flames and other ignition sources. Contact with incompatible materials. |
| **Incompatible materials** | Strong oxidising agents. |
| **Hazardous decomposition products** | No hazardous decomposition products are known. |

## 11. Toxicological information

**Information on likely routes of exposure**

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|---|---|
| **Inhalation** | Prolonged inhalation may be harmful. |
| **Skin contact** | Prolonged or repeated skin contact may cause drying, cracking, or irritation. |
| **Eye contact** | Causes serious eye irritation. |

**Ingestion** Expected to be a low ingestion hazard.

**Symptoms related to the physical, chemical and toxicological characteristics** Headache. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Coughing.

**Information on toxicological effects**

**Acute toxicity** Not expected to be acutely toxic.

| Components | Species | Test Results |
|---|---|---|
| Ethanol (CAS 64-17-5) | | |
| **Acute** | | |
| **Inhalation** | | |
| *Vapour* | | |
| LC50 | Rat | 117 - 125 mg/l, 4 Hours |
| **Oral** | | |
| LD50 | Rat | 10470 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. |

**Canada - Manitoba OELs: carcinogenicity**

| | |
|---|---|
| Ethanol (CAS 64-17-5) | Confirmed animal carcinogen with unknown relevance to humans. |

**Reproductive toxicity** Possible reproductive hazard.

**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.

## 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** | | | |
| *Acute* | | | |
| 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 |
| *Chronic* | | | |
| Algae | NOEC | Marine water algae | 1580 mg/l |

| Components | | Species | Test Results |
|---|---|---|---|
| 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** | | | |
| *Acute* | | | |
| Micro-organisms | LC50 | Micro-organisms | 5800 mg/l, 4 hours |
| **Terrestrial** | | | |
| *Acute* | | | |
| Plant | EC50 | Terrestrial plant | 633 mg/kg dw |

**Persistence and degradability** Expected to be readily biodegradable.

**Bioaccumulative potential**

**Partition coefficient n-octanol / water (log Kow)**

Ethyl Alcohol (95% VOL) 0.032, (Approximate)

**Mobility in soil** Expected to be highly 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** UN1170
**UN proper shipping name** ETHANOL
**Transport hazard class(es)**
**Class** 3
**Subsidiary risk** -
**Packing group** II
**Environmental hazards** No.
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

**IATA**

**UN number** UN1170
**UN proper shipping name** Ethanol
**Transport hazard class(es)**
**Class** 3
**Subsidiary risk** -
**Packing group** II
**Environmental hazards** No.
**ERG Code** 3L
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

**IMDG**

**UN number** UN1170
**UN proper shipping name** ETHANOL
**Transport hazard class(es)**
**Class** 3

| | |
|---|---|
| **Subsidiary risk** | - |
| **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** | This product is not intended to be transported in bulk. |

## 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 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** | 24-March-2021 |
| **Revision date** | 11-December-2023 |

| | |
|---|---|
| **Version No.** | 02 |
| **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. |