

# SAFETY DATA SHEET

## 1. Identification

<b>Product identifier</b>	<b>Chloroform w Ethanol</b>
<b>Other means of identification</b>	None.
<b>Recommended use</b>	General purpose solvent.
<b>Recommended restrictions</b>	Use in accordance with manufacturer's recommendations.

### Manufacturer/Importer/Supplier/Distributor information

<b>Company Name</b>	Greenfield Global USA Inc.
<b>Address</b>	1101 Isaac Shelby Drive Shelbyville, KY 40065 USA
<b>Telephone</b>	502.232.7600
<b>Fax</b>	502.633.6100

<b>Company Name</b>	Greenfield Global USA Inc.
<b>Address</b>	58 Vale Road Brookfield, CT 06804 USA
<b>Telephone</b>	203.740.3471
<b>Fax</b>	203.740.3481

<b>Emergency phone number</b>	
<b>USA</b>	CHEMTREC: 1.800.424.9300 (CCN 17213)
<b>International</b>	CHEMTREC: +1.703.527.3887 (CCN 17213)

## 2. Hazard(s) identification

<b>Physical hazards</b>	Not classified.	
<b>Health hazards</b>	Acute toxicity, oral	Category 4
	Acute toxicity, inhalation	Category 3
	Skin corrosion/irritation	Category 2
	Carcinogenicity	Category 2
	Reproductive toxicity	Category 2
	Specific target organ toxicity, repeated exposure	Category 1 (Kidney, Liver)
<b>Environmental hazards</b>	Hazardous to the aquatic environment, acute hazard	Category 3
	Hazardous to the aquatic environment, long-term hazard	Category 2
<b>OSHA defined hazards</b>	Not classified.	

### Label elements



<b>Signal word</b>	Danger
<b>Hazard statement</b>	Harmful if swallowed. Toxic if inhaled. Causes skin irritation. Suspected of causing cancer. Suspected of damaging fertility or the unborn child. Causes damage to organs (Kidney, Liver) through prolonged or repeated exposure. Harmful to aquatic life. Toxic 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. Do not breathe mist/vapors. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

### Response

If swallowed: Call a poison center/doctor if you feel unwell. Rinse mouth. 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 inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor. If exposed or concerned: Get medical advice/attention. Collect spillage.

### Storage

Store in a well-ventilated place. Keep container tightly closed. Store locked up.

### Disposal

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

### Hazard(s) not otherwise classified (HNOC)

None known.

### Supplemental information

None.

## 3. Composition/information on ingredients

### Mixtures

Chemical name	CAS number	%
Chloroform	67-66-3	> 98
Ethyl alcohol	64-17-5	< 2

### Composition comments

All concentrations are in percent by weight unless otherwise indicated.

## 4. First-aid measures

### Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a poison center or doctor/physician.

### 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

Rinse with water. Get medical attention if irritation develops and persists.

### Ingestion

Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.

### Most important symptoms/effects, acute and delayed

Headache. Dizziness. Nausea. Skin irritation. May cause redness and pain. Edema. Jaundice. Prolonged exposure may cause chronic effects.

### Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

### General information

If exposed or concerned: Get medical advice/attention. 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. Show this safety data sheet to the doctor in attendance.

## 5. Fire-fighting measures

### Suitable extinguishing media

Use fire-extinguishing media appropriate for surrounding materials.

### Unsuitable extinguishing media

None known.

### Specific hazards arising from the chemical

During fire, gases hazardous to health may be formed. Thermal decomposition or combustion may produce: hydrogen chloride gas, phosgene.

### 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

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

The product is non-combustible.

## 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 breathe mist/vapors. 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.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

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. Do not breathe mist/vapors. Do not taste or swallow. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. When using, do not eat, drink or smoke. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

### Conditions for safe storage, including any incompatibilities

Store locked up. Store in tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Chloroform (CAS 67-66-3)	Ceiling	240 mg/m <sup>3</sup> 50 ppm
Ethyl alcohol (CAS 64-17-5)	PEL	1900 mg/m <sup>3</sup> 1000 ppm

#### US. ACGIH Threshold Limit Values

Components	Type	Value
Chloroform (CAS 67-66-3)	TWA	10 ppm
Ethyl alcohol (CAS 64-17-5)	STEL	1000 ppm

#### US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Chloroform (CAS 67-66-3)	STEL	9.78 mg/m <sup>3</sup> 2 ppm
Ethyl alcohol (CAS 64-17-5)	TWA	1900 mg/m <sup>3</sup> 1000 ppm

### Biological limit values

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

### Appropriate engineering controls

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

Chemical goggles are recommended.

<b>Skin protection</b>	
<b>Hand protection</b>	Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.
<b>Skin protection</b>	
<b>Other</b>	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.
<b>Respiratory protection</b>	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 vapor cartridge.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>General hygiene considerations</b>	Observe any medical surveillance requirements. Keep away from food and drink. 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

<b>Physical state</b>	Liquid.
<b>Form</b>	Liquid.
<b>Color</b>	Colorless, clear.
<b>Odor</b>	Not available.
<b>Odor threshold</b>	Not available.
<b>pH</b>	Not available.
<b>Melting point/freezing point</b>	-83.2 °F (-64 °C)
<b>Initial boiling point and boiling range</b>	141.8 °F (61 °C)
<b>Flash point</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	Not available.
<b>Flammability limit - upper (%)</b>	Not available.
<b>Vapor pressure</b>	160 mm Hg (68 °F (20 °C))
<b>Vapor density</b>	Not available.
<b>Relative density</b>	1.492 (77 °F (25 °C))
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Not available.
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Other information</b>	
<b>Explosive properties</b>	Not explosive.
<b>Oxidizing properties</b>	Not oxidizing.

## 10. Stability and reactivity

<b>Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.

<b>Conditions to avoid</b>	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with incompatible materials.
<b>Incompatible materials</b>	Strong oxidizing agents. Strong bases. Magnesium. Sodium. Sodium oxides. Lithium.
<b>Hazardous decomposition products</b>	Decomposition products: Hydrogen chloride gas. Phosgene.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	Toxic if inhaled.
<b>Skin contact</b>	Causes skin irritation.
<b>Eye contact</b>	Direct contact with eyes may cause temporary irritation.
<b>Ingestion</b>	Harmful if swallowed.

**Symptoms related to the physical, chemical and toxicological characteristics** Headache. Dizziness. Nausea. Skin irritation. May cause redness and pain. Edema. Jaundice. Prolonged exposure may cause chronic effects.

### Information on toxicological effects

**Acute toxicity** Toxic if inhaled. Harmful if swallowed.

Components	Species	Test Results
Chloroform (CAS 67-66-3)		
<b>Acute</b>		
<b>Inhalation</b>		
<i>Vapor</i>		
LC50	Rat	9200 mg/m <sup>3</sup> , 6 Hours
<b>Oral</b>		
LD50	Rat	440 mg/kg
Ethyl alcohol (CAS 64-17-5)		
<b>Acute</b>		
<b>Inhalation</b>		
<i>Vapor</i>		
LC50	Rat	117 - 125 mg/l, 4 Hours
<b>Oral</b>		
LD50	Rat	10470 mg/kg

**Skin corrosion/irritation** Causes skin irritation.

**Serious eye damage/eye irritation** Direct contact with eyes may cause temporary irritation.

### Respiratory or skin sensitization

<b>Respiratory sensitization</b>	Not a respiratory sensitizer.
<b>Skin sensitization</b>	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.

### IARC Monographs. Overall Evaluation of Carcinogenicity

Chloroform (CAS 67-66-3) 2B Possibly carcinogenic to humans.

### NTP Report on Carcinogens

Chloroform (CAS 67-66-3) Reasonably Anticipated to be a Human Carcinogen.

### OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

**Reproductive toxicity** Suspected of damaging fertility or the unborn child.

**Specific target organ toxicity - single exposure** Not classified.

**Specific target organ toxicity - repeated exposure** Causes damage to organs (Kidney, Liver) through prolonged or repeated exposure.

**Aspiration hazard** Not an aspiration hazard.

**Chronic effects** Prolonged inhalation may be harmful. Causes damage to organs through prolonged or repeated exposure. Prolonged exposure may cause chronic effects.

## 12. Ecological information

**Ecotoxicity** Harmful to aquatic life. Toxic to aquatic life with long lasting effects.

Components		Species	Test Results
Chloroform (CAS 67-66-3)			
<b>Aquatic</b>			
<i>Acute</i>			
Algae	EC50	Chlamydomonas reinhardtii	13.3 mg/l, 72 Hours
Crustacea	EC50	Daphnia magna	29 mg/l, 48 Hours
Fish	LC50	Oncorhynchus mykiss	18 mg/l, 96 Hours
<i>Chronic</i>			
Crustacea	NOEC	Daphnia magna	6.3 mg/l, 21 days
Fish	NOEC	Oryzias latipes	0.151 mg/l, 6 months
Ethyl alcohol (CAS 64-17-5)			
<b>Aquatic</b>			
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	NOEC	Marine water algae	1580 mg/l
	LC50	Freshwater fish	11200 mg/l, 24 hours
	NOEC	Freshwater fish	250 mg/l
Invertebrate	EC50	Freshwater invertebrate	5012 mg/l, 48 hours
		Marine water invertebrate	857 mg/l, 48 hours
	NOEC	Freshwater invertebrate	9.6 mg/l, 10 days
		Marine water invertebrate	79 mg/l, 96 hours
Other	EC50	Lemna minor	4432 mg/l, 7 days
	NOEC	Lemna minor	280 mg/l, 7 days
<b>Other</b>			
Micro-organisms	LC50	Micro-organisms	5800 mg/l, 4 hours
<b>Terrestrial</b>			
Plant	EC50	Terrestrial plant	633 mg/kg dw

**Persistence and degradability** No data is available on the degradability of this product.

### Bioaccumulative potential

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

Chloroform (CAS 67-66-3) 1.97

**Mobility in soil** No data available for this product.

**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. Incinerate the material under controlled conditions in an approved incinerator. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. 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.

#### US RCRA Hazardous Waste U List: Reference

Chloroform (CAS 67-66-3) U044

<b>Waste from residues / unused products</b>	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).
<b>Contaminated packaging</b>	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

### DOT

<b>UN number</b>	UN1888
<b>UN proper shipping name</b>	Chloroform mixture (Chloroform RQ = 10 LBS)
<b>Transport hazard class(es)</b>	
<b>Class</b>	6.1
<b>Subsidiary risk</b>	-
<b>Label(s)</b>	6.1
<b>Packing group</b>	III
<b>Environmental hazards</b>	
<b>Marine pollutant</b>	Yes.
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.
<b>Special provisions</b>	IB3, N36, T7, TP2
<b>Packaging exceptions</b>	153
<b>Packaging non bulk</b>	203
<b>Packaging bulk</b>	241

### IATA

<b>UN number</b>	UN1888
<b>UN proper shipping name</b>	Chloroform mixture
<b>Transport hazard class(es)</b>	
<b>Class</b>	6.1
<b>Subsidiary risk</b>	-
<b>Packing group</b>	III
<b>Environmental hazards</b>	Yes.
<b>ERG Code</b>	6A
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.

### IMDG

<b>UN number</b>	UN1888
<b>UN proper shipping name</b>	CHLOROFORM MIXTURE
<b>Transport hazard class(es)</b>	
<b>Class</b>	6.1
<b>Subsidiary risk</b>	-
<b>Packing group</b>	III
<b>Environmental hazards</b>	
<b>Marine pollutant</b>	Yes.
<b>EmS</b>	F-A, S-A
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling. Chloroform

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not established.

## 15. Regulatory information

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

### CERCLA Hazardous Substance List (40 CFR 302.4)

Chloroform (CAS 67-66-3) Listed.

### SARA 304 Emergency release notification

Methane, trichloro- (CAS 67-66-3) 10 LBS

### OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

**Toxic Substances Control Act (TSCA)** All components of the mixture on the TSCA 8(b) inventory are designated "active".

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**SARA 302 Extremely hazardous substance**

Chemical name	CAS number	Reportable quantity (pounds)	Threshold planning quantity (pounds)	Threshold planning quantity, lower value (pounds)	Threshold planning quantity, upper value (pounds)
Chloroform	67-66-3	10	10000		

**SARA 311/312 Hazardous chemical** Yes

**Classified hazard categories** Acute toxicity (any route of exposure)  
Skin corrosion or irritation  
Carcinogenicity  
Reproductive toxicity  
Specific target organ toxicity (single or repeated exposure)

**SARA 313 (TRI reporting)**

Chemical name	CAS number	% by wt.
Chloroform	67-66-3	> 98

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Chloroform (CAS 67-66-3)

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Chloroform (CAS 67-66-3)

**Safe Drinking Water Act (SDWA)** Contains component(s) regulated under the Safe Drinking Water Act.

**FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace**

Ethyl alcohol (CAS 64-17-5) Low priority

**US state regulations**

**US. Massachusetts RTK - Substance List**

Chloroform (CAS 67-66-3)  
Ethyl alcohol (CAS 64-17-5)

**US. New Jersey Worker and Community Right-to-Know Act**

Chloroform (CAS 67-66-3)  
Ethyl alcohol (CAS 64-17-5)

**US. Pennsylvania Worker and Community Right-to-Know Law**

Chloroform (CAS 67-66-3)  
Ethyl alcohol (CAS 64-17-5)

**US. Rhode Island RTK**

Chloroform (CAS 67-66-3)  
Ethyl alcohol (CAS 64-17-5)

**California Proposition 65**



**WARNING:** This product can expose you to Chloroform, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**California Proposition 65 - CRT: Listed date/Carcinogenic substance**

Chloroform (CAS 67-66-3) Listed: October 1, 1987

**California Proposition 65 - CRT: Listed date/Developmental toxin**

Chloroform (CAS 67-66-3) Listed: August 7, 2009

**US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))**

Chloroform (CAS 67-66-3)

**International Inventories**

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

Country(s) or region	Inventory name	On inventory (yes/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 this product complies 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, including date of preparation or last revision

**Issue date** 22-January-2019

**Revision date** -

**Version #** 01

**HMIS® ratings** Health: 3\*  
Flammability: 0  
Physical hazard: 0

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