



1. Identification

Product identifier	CDA 20-2, 200 Proof		
Other means of identification	None.		
Recommended use	General purpose solvent.		
Recommended restrictions	Use in accordance with manufacturer's recomm	mendations.	
Manufacturer/Importer/Supplier/	Distributor information		
Company Name	Greenfield Global USA Inc.		
Address	1101 Isaac Shelby Drive		
	Shelbyville, KY 40065		
	USA		
Telephone	502.232.7600		
Fax	502.633.6100		
Company Name	Greenfield Global USA Inc.		
Address	58 Vale Road		
	Brookfield, CT 06804		
	USA		
Telephone	203.740.3471		
Fax	203.740.3481		
Emergency phone number			
USA	CHEMTREC: 1.800.424.9300 (CCN 17213)		
International	CHEMTREC: +1.703.527.3887 (CCN 17213)		
2. Hazard(s) identification			
Physical hazards	Flammable liquids	Category 2	
Health hazards	Serious eye damage/eye irritation	Category 2	
	Reproductive toxicity	Category 2	
	Specific target organ toxicity, repeated	Category 2 (Nervous system)	

OSHA defined hazards

Label elements



exposure (inhalation)

Not classified.

Signal word Hazard statement

Highly flammable liquid and vapor. Causes serious eye irritation. Suspected of damaging fertility or the unborn child. May cause damage to organs (Nervous system) through prolonged or repeated exposure by inhalation.

Precautionary statement Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe mist or vapor. 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/shower. 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. If exposed or concerned: Get medical advice/attention. In case of fire: Use appropriate media 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.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Chemical name		CAS number	%
Ethyl alcohol		64-17-5	98.04
n-Hexane		110-54-3	1.7
Toluene		108-88-3	0.22
Cyclohexane		110-82-7	0.04
Composition comments	All concentrations are in percent by weight	unless otherwise indicated.	
4. First-aid measures			
Inhalation	Move to fresh air. Call a physician if sympto	oms develop or persist.	
Skin contact	Take off immediately all contaminated cloth attention if irritation develops and persists.	ing. Rinse skin with water/shov	ver. Get medical
Eye contact	Immediately flush eyes with plenty of water present and easy to do. Continue rinsing. G		
Ingestion	Rinse mouth. Get medical attention if symp	toms occur.	
Most important symptoms/effects, acute and delayed	Narcosis. Headache. Behavioral changes. I Symptoms may include stinging, tearing, re Prolonged exposure may cause chronic effe	dness, swelling, and blurred vis	
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and t immediately. While flushing, remove clothes ambulance. Continue flushing during transp Symptoms may be delayed.	s which do not adhere to affecte	ed area. Call an
General information	Take off all contaminated clothing immediat advice/attention. If you feel unwell, seek me that medical personnel are aware of the ma themselves. Show this safety data sheet to before reuse.	edical advice (show the label w aterial(s) involved, and take pre-	nere possible). Ens cautions to protect
5. Fire-fighting measures			
Suitable extinguishing media	Water fog. Alcohol resistant foam. Dry cher	nical 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	Vapors may form explosive mixtures with a of ignition and flash back. During fire, gases products may include: carbon oxides.		
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full	protective clothing must be wo	rn in case of fire.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breat so without risk. Use water spray to keep fire		m fire area if you c
Specific methods	Use standard firefighting procedures and co	onsider the hazards of other inv	olved materials.
General fire hazards	Highly flammable liquid and vapor.		

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 or vapor. 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.
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 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. Pregnant or
	breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

8. Exposure controls/personal protection

Occupational exposure limits

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

Components	Туре	Value	
Ethyl alcohol (CAS 64-17-5)	PEL	1900 mg/m3	
		1000 ppm	
n-Hexane (CAS 110-54-3)	PEL	1800 mg/m3	
		500 ppm	
US. OSHA Table Z-2 (29 CFR 1910.	1000)		
Components	Туре	Value	
Toluene (CAS 108-88-3)	Ceiling	300 ppm	
	TWA	200 ppm	
US. ACGIH Threshold Limit Values	5		
Components	Туре	Value	
Ethyl alcohol (CAS 64-17-5)	STEL	1000 ppm	
n-Hexane (CAS 110-54-3)	TWA	50 ppm	
Toluene (CAS 108-88-3)	TWA	20 ppm	
US. NIOSH: Pocket Guide to Chem	ical Hazards		
Components	Туре	Value	
Ethyl alcohol (CAS 64-17-5)	TWA	1900 mg/m3	
		1000 ppm	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Туре	Value	
n-Hexane (CAS 110-54-3)	TWA	180 mg/m3	
		50 ppm	
Toluene (CAS 108-88-3)	STEL	560 mg/m3	
		150 ppm	
	TWA	375 mg/m3	
		100 ppm	

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time	
n-Hexane (CAS 110-54-3)	0.5 mg/l	2,5-Hexanedio ne, without hydrolysis	Urine	*	
Toluene (CAS 108-88-3)	0.3 mg/g	o-Cresol, with hydrolysis	Creatinine in urine	*	
	0.03 mg/l	Toluene	Urine	*	
	0.02 mg/l	Toluene	Blood	*	

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

Exposure guidelines

US - California OELs: Skin c	lesignation	
		an be absorbed through the skin. an be absorbed through the skin.
Toluene (CAS 108-88-3) US ACGIH Threshold Limit	Sk	in designation applies.
n-Hexane (CAS 110-54-3) Ca	an be absorbed through the skin.
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, Eye/face protection	, such as personal protective equipment Chemical goggles are recommended.	
Skin protection Hand protection	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.	
Skin protection 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 vapor cartridge.	
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.	
General hygiene considerations	Observe any medical surveillance requirements. 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.
Color	Colorless.

Odor	Not available.
Odor threshold	Not available.
рН	Not available.
Melting point/freezing point	-173.2 °F (-114 °C)
Initial boiling point and boiling range	176 °F (80 °C)
Flash point	57.2 °F (14.0 °C) Closed Cup
Evaporation rate	3 (Butyl Acetate = 1) (100% Ethyl Alcohol)
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or exp	losive limits
Flammability limit - lower (%)	3 % v/v (100% Ethyl alcohol)
Flammability limit - upper (%)	19 % v/v (100% Ethyl alcohol)
Vapor pressure	41.6 mm Hg
Vapor density	1.6 (air = 1)
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Completely soluble. (100% Ethyl alcohol)
Solubility temp. (water)	68 °F (20 °C)
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	685.4 °F (363 °C)
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Bulk density	6.7 lb/gal
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
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. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.
11. Toxicological informat	ion
Information on likely routes of e	
Inhalation	Prolonged inhalation may be harmful.
Skin contact	Causes mild skin irritation.
Eye contact	Causes serious eye irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the	Narcosis. Headache. Behavioral changes. Decrease in motor functions. Severe eye irritation.

Symptoms related to the
physical, chemical and
toxicological characteristicsNarcosis. Headache. Behavioral changes. Decrease in motor functions. Severe eye irritati
Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Coughing.
Prolonged exposure may cause chronic effects.

Information on toxicological effects

Acute toxicity	Not expected to be acutely toxic.
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Components	Species	Test Results
Ethyl alcohol (CAS 64-17-5)		
Acute		
Inhalation		
Vapor		
LC50	Rat	117 - 125 mg/l, 4 Hours
Oral		
LD50	Rat	10470 mg/kg
Toluene (CAS 108-88-3)		
<u>Acute</u>		
Dermal		
LD50	Rabbit	12200 mg/kg
Inhalation		
Vapor	Det	
LC50	Rat	28.1 mg/l, 4 Hours
Skin corrosion/irritation	Causes mild skin irritation.	
Serious eye damage/eye irritation	Causes serious eye irritation.	
Respiratory or skin sensitizatio	n	
Respiratory sensitization	Not a respiratory sensitizer.	
Skin sensitization	This product is not expected to	o 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	Not classifiable as to carcinog	enicity to humans.
IARC Monographs. Overall	Evaluation of Carcinogenicity	
Toluene (CAS 108-88-3)		3 Not classifiable as to carcinogenicity to humans.
NTP Report on Carcinogen	S	
Not listed.	d Substances (20 CEB 1010 1)	104 1052)
Not regulated.	ed Substances (29 CFR 1910.10	01-1053)
Reproductive toxicity	Suspected of damaging fertility	or the unborn child
Specific target organ toxicity -	Not classified.	
single exposure	Not classifica.	
Specific target organ toxicity - repeated exposure	May cause damage to organs inhalation.	(Nervous system) through prolonged or repeated exposure by
Aspiration hazard	Not an aspiration hazard.	
Chronic effects		through prolonged or repeated exposure. Prolonged inhalation may
12. Ecological information	n	
Ecotoxicity		s environmentally bazardous. However, this does not exclude the

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Eastavialty	
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
Ethyl alcohol (CAS 64-	17-5)		
Aquatic			
Algae	EC10	Freshwater algae	11.5 mg/l, 72 hours
	EC50	Freshwater algae	275 mg/l, 72 hours
		Marine water algae	1900 mg/l
	NOEC	Marine water algae	1580 mg/l
Fish	LC50	Freshwater fish	11200 mg/l, 24 hours
	NOEC	Freshwater fish	250 mg/l
Invertebrate	EC50	Freshwater invertebrate	5012 mg/l, 48 hours

Components		Species	Test Results
		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
Other			
Micro-organisms	LC50	Micro-organisms	5800 mg/l, 4 hours
Terrestial		-	
Plant	EC50	Terrestrial plant	633 mg/kg dw
Toluene (CAS 108-88-3)		·	0.0
Aquatic			
Acute			
Crustacea	EC50	Daphnia magna	11.5 mg/l, 48 hours
Fish	LC50	Oncorhynchus kisutch	5.5 mg/l, 96 hours
Chronic			
Crustacea	NOEC	Ceriodaphnia dubia	0.74 mg/l, 7 days
Fish	NOEC	Oncorhynchus kisutch	1.4 mg/l, 40 days
ersistence and degradability	No data is	available on the degradability of this pr	roduct
ioaccumulative potential			
Partition coefficient n-octa	nol / water (l	og Kow)	
Toluene (CAS 108-88-3)		2.73	
n-Hexane (CAS 110-54-3)		3.9	
obility in soil	No data available for this product.		
ther 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.		
3. Disposal consideratio	ons		
isposal 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 incinerate sealed containers. Dispose of contents/container in accordance with local/regional/national/international regulations.		
ocal disposal regulations	Dispose ir	accordance with all applicable regulati	ons.
azardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.		
aste from residues / unused oducts	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).		
ontaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.		
4. Transport informatior	ı		
от			
UN number	UN1170		
UN proper shipping name	•	hol solution	
Transport hazard class(es) Class	3		
Subsidiary risk	-		
Label(s)	3		
Packing group	II		
Environmental hazards			
Marine pollutant	No.		

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UN proper shipping name	Ethyl alcohol solution
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	П
Environmental hazards	
Marine pollutant	No.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	24, IB2, T4, TP1
Packaging exceptions	4b, 150

Packaging non bulk	202	
Packaging bulk	242	
ΙΑΤΑ		
UN number	UN1170	
UN proper shipping name	Ethyl alcohol solution	
Transport hazard class(es)	2	
Class	3	
Subsidiary risk	-	
Packing group Environmental hazards	No.	
ERG Code	3L	
	Read safety instructions, SDS and emerger	ncy procedures before handling.
IMDG		5
UN number	UN1170	
UN proper shipping name	ETHYL ALCOHOL SOLUTION	
Transport hazard class(es)		
Class	3	
Subsidiary risk	-	
Packing group	II	
Environmental hazards		
Marine pollutant	No.	
EmS	F-E, S-D	
	Read safety instructions, SDS and emerger	ncy procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not established.	
15. Regulatory information	I	
US federal regulations	This product is a "Hazardous Chemical" as Standard, 29 CFR 1910.1200.	defined by the OSHA Hazard Communication
TSCA Section 12(b) Exp	ort Notification (40 CFR 707, Subpt. D)	
Not regulated.	, , , , , , , , , , , , , , , , , , ,	
	ostance List (40 CFR 302.4)	
n-Hexane (CAS 110-		
Toluene (CAS 108-88		
SARA 304 Emergency re	elease notification	
Not regulated. OSHA Specifically Regu	lated Substances (29 CFR 1910.1001-1053	3)
Not regulated.		
Toxic Substances Control Act (TSCA)	All components of the mixture on the TSCA	.8(b) inventory are designated "active".
Superfund Amendments and Rea	authorization Act of 1986 (SARA)	
SARA 302 Extremely hazard		
Not listed.		
SARA 311/312 Hazardous chemical	Yes	
Classified hazard categories	Flammable (gases, aerosols, liquids, or soli Serious eye damage or eye irritation Reproductive toxicity Specific target organ toxicity (single or repe	
SARA 313 (TRI reporting) Chemical name	CAS number	% by wt.
		-
n-Hexane	110-54-3	1.7
Other federal regulations		
	112 Hazardous Air Pollutants (HAPs) List	
n-Hexane (CAS 110-54-3 Toluene (CAS 108-88-3))	

Toluene (CAS 108-88-3)

Clean Air Act (CAA) Secti Not regulated.	on 112(r) Accidental Release F	Prevention (40 CFR 68.130)	
Safe Drinking Water Act (SDWA)	Contains component(s) regu	llated under the Safe Drinking Water Act	t.
Drug Enforcement Ac Chemical Code Numb		ential Chemicals (21 CFR 1310.02(b)	and 1310.04(f)(2) and
Toluene (CAS 108	-88-3)	6594	
Drug Enforcement Ac	Iministration (DEA). List 1 & 2	Exempt Chemical Mixtures (21 CFR 1	310.12(c))
Toluene (CAS 108	,	35 %WV	
-	al Mixtures Code Number		
Toluene (CAS 108		594	
-		Safety in the Flavor Manufacturing Wo	огкріасе
Ethyl alcohol (CAS	5 64-17-5)	Low priority	
IS state regulations	Substance List		
US. Massachusetts RTK -			
Ethyl alcohol (CAS 64- n-Hexane (CAS 110-54			
Toluene (CAS 108-88-			
US. New Jersey Worker a	nd Community Right-to-Know	Act	
Ethyl alcohol (CAS 64-			
n-Hexane (CAS 110-54			
Toluene (CAS 108-88-	and Community Right-to-Kno	wlaw	
Ethyl alcohol (CAS 64-			
n-Hexane (CAS 110-54			
Toluene (CAS 108-88-			
US. Rhode Island RTK			
Ethyl alcohol (CAS 64-			
n-Hexane (CAS 110-54 Toluene (CAS 108-88-			
	5)		
California Proposition 65	This product can expose you to	chemicals including n-Hexane, which is k	rown to the State of
		or other reproductive harm. For more inf	
California Propositio	n 65 - CRT: Listed date/Develo	omental toxin	
Toluene (CAS 108	-88-3)	Listed: January 1, 1991	
California Proposition	n 65 - CRT: Listed date/Male re	productive toxin	
n-Hexane (CAS 12		Listed: December 15, 2017	
subd. (a))		sumer Products Regulations (Cal. Co	ode Regs, tit. 22, 69502.3,
n-Hexane (CAS 1 ⁻ Toluene (CAS 108			
nternational Inventories			
Country(s) or region	Inventory name		On inventory (yes/no)*
Australia	Australian Inventory of Cher	nical Substances (AICS)	Yes
Canada	Domestic Substances List (I	DSL)	Yes
Canada	Non-Domestic Substances I	.ist (NDSL)	No
China	Inventory of Existing Chemic	cal Substances in China (IECSC)	Yes
Europe	European Inventory of Exist Substances (EINECS)	ng Commercial Chemical	Yes
Europe		emical Substances (ELINCS)	No
Japan		w Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (EC		Yes
New Zealand	New Zealand Inventory		Yes
Philippines	Philippine Inventory of Chen	nicals and Chemical Substances	Yes
	(PICCS)		

Country(s) or region	Inventory name	On inventory (yes/no)*
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes
	mplies with the inventory requirements administered by the governing country(s). components of the product are not listed or exempt from listing on the inventory a	administered by the governing

16. Other information, including date of preparation or last revision

Issue date	22-January-2019
Revision date	-
Version #	01
HMIS® ratings	Health: 2* Flammability: 3 Physical hazard: 0
Disclaimer	This product is subject to Greenfield Global USA Inc.'s terms and conditions, which can be found at http://www.greenfield.com/tc-po-us/. Greenfield cannot anticipate all conditions under which this information and this product, or the products of other manufacturers in combination with this product, may be used. The user is responsible for the proper and safe use, handling, storage and disposal of the product, and assumes liability for any loss, injury, damage or expense arising from any failure to do so. The data in this sheet is based on information and experience available at the time of writing.