



1. Identification

1. Identinoution		
Product identifier	CDA 19-5, 190 Proof	
Other means of identification	None.	
Recommended use	General purpose solvent.	
Recommended restrictions	Use in accordance with manufacturer's rec	commendations.
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 1721	3)
International	CHEMTREC: +1.703.527.3887 (CCN 172	13)
2. Hazard(s) identification		
Physical hazards	Flammable liquids	Category 2
Health hazards	Serious eye damage/eye irritation	Category 2
	Carcinogenicity	Category 2
	Reproductive toxicity	Category 2
OSHA defined hazards	Not classified.	
Label elements		
Signal word	Danger	
Hazard statement	Highly flammable liquid and vapor. Causes Suspected of damaging fertility or the unbo	s serious eye irritation. Suspected of causing cancer. orn child.
Precautionary statement		

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. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.

ResponseIf 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.

Prevention

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

Mixtures			
Chemical name		CAS number	%
Ethyl alcohol		64-17-5	88.2
2-Pentanone, 4-methyl-		108-10-1	3.8
n-Hexane		110-54-3	0.69
Water		7732-18-5	7.2
Composition comments	All concentrations are in percent by wei either non-hazardous or are below repo		mponents not listed a
4. First-aid measures			
Inhalation	Move to fresh air. Call a physician if syn	nptoms develop or persist.	
Skin contact	Take off immediately all contaminated or attention if irritation develops and persist		ver. Get medical
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 sy	mptoms occur.	
Most important symptoms/effects, acute and delayed	Headache. Severe eye irritation. Sympto blurred vision. Coughing.	oms may include stinging, tearing,	redness, swelling, ar
Indication of immediate medical attention and special treatment needed	Provide general supportive measures a immediately. While flushing, remove clo ambulance. Continue flushing during tra Symptoms may be delayed.	thes which do not adhere to affected	ed area. Call an
General information	Take off all contaminated clothing imme advice/attention. If you feel unwell, seek that medical personnel are aware of the themselves. Show this safety data shee before reuse.	medical advice (show the label when material(s) involved, and take pre-	nere possible). Ensui cautions to protect
5. Fire-fighting measures			
Suitable extinguishing media	Water fog. Alcohol resistant foam. Dry c	hemical 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 wit of ignition and flash back. During fire, ga 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	In case of fire and/or explosion do not b		m fire area if you car

Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
	Link, Annual Estimates and the second

General fire hazards Highly flammable liquid and vapor.

6. Accidental release measures

equipment/instructions

Personal precautions,	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all
protective equipment and	ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate
emergency procedures	protective equipment and clothing during clean-up. Do not touch damaged containers or spilled
0 11	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.

so without risk. Use water spray to keep fire-exposed containers cool.

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. The product is completely soluble in water.
	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. Put material in suitable, covered, labeled containers. 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.
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. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Туре	Value	
2-Pentanone, 4-methyl- (CAS 108-10-1)	PEL	410 mg/m3	
		100 ppm	
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. ACGIH Threshold Limit Values	;		
Components	Туре	Value	
2-Pentanone, 4-methyl- (CAS 108-10-1)	STEL	75 ppm	
	TWA	20 ppm	
Ethyl alcohol (CAS 64-17-5)	STEL	1000 ppm	
n-Hexane (CAS 110-54-3)	TWA	50 ppm	
US. NIOSH: Pocket Guide to Chem	ical Hazards		
Components	Туре	Value	
2-Pentanone, 4-methyl- (CAS 108-10-1)	STEL	300 mg/m3	
		75 ppm	
	TWA	205 mg/m3	
		50 ppm	
Ethyl alcohol (CAS 64-17-5)	TWA	1900 mg/m3	
		1000 ppm	

Components	Туре		Va	lue
n-Hexane (CAS 110-54-3)	TWA		18	0 mg/m3
			50	ppm
iological limit values				
ACGIH Biological Exposu				
Components	Value	Determinant	Specimen	Sampling Time
2-Pentanone, 4-methyl- (CAS 108-10-1)	1 mg/l	Methyl isobutyl ketone	Urine	*
n-Hexane (CAS 110-54-3)	0.5 mg/l	2,5-Hexanedio ne, without hydrolysis	Urine	*
* - For sampling details, plea	ase see the source docu	ument.		
xposure guidelines				
US - California OELs: Skir	designation			
n-Hexane (CAS 110-54			absorbed throu	ıgh the skin.
US ACGIH Threshold Limi	•			
n-Hexane (CAS 110-54 ppropriate engineering	,		absorbed throu	Good general ventilation should be used.
ontrols	Ventilation rates she exhaust ventilation,	ould be matched to or other engineerin xposure limits have	conditions. If ap g controls to ma not been estab	oplicable, use process enclosures, local aintain airborne levels below recommende lished, maintain airborne levels to an
dividual protection measure	•	-	-	
Eye/face protection	Chemical goggles a			
Skin protection				
Hand protection				loves can be recommended by the glove oves. Frequent change is advisable.
Skin protection				
Other	Wear appropriate cl	nemical resistant cl	othing. Use of a	n 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 th	ermal protective cl	othing, when ne	cessary.
eneral hygiene onsiderations	personal hygiene m	easures, such as w	ashing after har	n using do not smoke. Always observe goo ndling the material and before eating, g and protective equipment to remove
. Physical and chemica	l properties			
ppearance				
Physical state	Liquid.			
-	•			

Liquid.
Colorless.
Not available.
Not available.
Not available.
-173.2 °F (-114 °C)
172.4 °F (78 °C)
57.2 °F (14.0 °C) Closed Cup
3 (Butyl acetate = 1) (100% Ethyl alcohol) Not applicable.

Upper/lower flammability or explosive limits

opper/lower naminability of exp	
Flammability limit - lower (%)	3.3 % 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	6.79 lb/gal
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	
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 information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	Prolonged skin contact may cause temporary 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
2-Pentanone, 4-methyl- (CAS 108-10-1)	
<u>Acute</u>		
Dermal		
LD50	Rabbit	> 16000 mg/kg
Oral		
LD50	Rat	3200 mg/kg

Components	Species	Test Results
Ethyl alcohol (CAS 64-17-5)		
<u>Acute</u>		
Inhalation		
Vapor		
LC50	Rat	117 - 125 mg/l, 4 Hours
Oral		
LD50	Rat	10470 mg/kg
Skin corrosion/irritation	Prolonged skin contact may cause temporary irrita	tion.
Serious eye damage/eye irritation	Causes serious eye irritation.	
Respiratory or skin sensitization	ı	
Respiratory sensitization	Not a respiratory sensitizer.	
Skin sensitization	This product is not expected to cause skin sensitiz	ation.
Germ cell mutagenicity	No data available to indicate product or any compo mutagenic or genotoxic.	onents present at greater than 0.1% are
Carcinogenicity	Suspected of causing cancer.	
IARC Monographs. Overall	Evaluation of Carcinogenicity	
2-Pentanone, 4-methyl- (· · · · ·	ogenic to humans.
NTP Report on Carcinogens	5	
Not listed.	d 0	
	d Substances (29 CFR 1910.1001-1053)	
Not regulated.	Suspected of damaging fertility or the unborn child	
Reproductive toxicity	Not classified.	
Specific target organ toxicity - single exposure	NUT Classifieu.	
Specific target organ toxicity - repeated exposure	Not classified.	
Aspiration hazard	Not an aspiration hazard.	
Chronic effects	Prolonged inhalation may be harmful. Prolonged e	xposure may cause chronic effects.
12. Ecological information	1	
Ecotoxicity	The product is not classified as environmentally ha possibility that large or frequent spills can have a h	
O		Test Desults

Components		Species	Test Results
2-Pentanone, 4-methyl-	- (CAS 108-10-1)		
Aquatic			
Acute			
Crustacea	EC50	Water flea (Daphnia magna)	3682 mg/l, 24 hours
Fish	LC50	Pimephales promelas	505 mg/l, 96 Hours
Chronic			
Crustacea	EC50	Daphnia magna	78 mg/l, 21 days
Fish	NOEC	Pimephales promelas	57 mg/l, 31 days
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
Persistence and degradability	No data is a	vailable on the degradability of this produ	ct.
Bioaccumulative potential			
Partition coefficient n-octa 2-Pentanone, 4-methyl- (CA n-Hexane (CAS 110-54-3)	• •	g Kow) 1.31 3.9	
lobility in soil	The product	t is completely soluble in water.	
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.		
3. Disposal consideration	ons		
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 incinerate sealed containers. Dispose of contents/container in accordance with local/regional/national/international regulations.		

Dispose in accordance with all applicable regulations.

disposal company.

Disposal instructions).

The waste code should be assigned in discussion between the user, the producer and the waste

Since emptied containers may retain product residue, follow label warnings even after container is

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:

 emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.	

14. Transport information

Local disposal regulations

Waste from residues / unused

Hazardous waste code

Contaminated packaging

products

DOT	
UN number	UN1993
UN proper shipping name	Flammable liquids, n.o.s. (Ethyl alcohol; 2-Pentanone, 4-methyl-)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	II
Environmental hazards	
Marine pollutant	No
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	IB2, T7, TP1, TP8, TP28
Packaging exceptions	150
Packaging non bulk	202
Packaging bulk	242
ΙΑΤΑ	
UN number	UN1993
UN proper shipping name	Flammable liquid, n.o.s. (Ethyl alcohol; 2-Pentanone, 4-methyl-)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	П
Environmental hazards	No.

 ERG Code
 3H

 Special precautions for user
 Read safety instructions, SDS and emergency procedures before handling.

Special precautions for user	 Read safety instructions, § 	SDS and emergenc	y procedures before handling.
IMDG			
UN number	UN1993		
UN proper shipping name Transport hazard class(es)	FLAMMABLE LIQUID, N.C	J.S. (Etnyi alconol;	2-Pentanone, 4-metnyl-)
Class	3		
Subsidiary risk	-		
Packing group Environmental hazards	II		
Marine pollutant	No.		
EmS	F-E, <u>S-E</u>		
Special precautions for user	-	SDS and emergenc	y procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not established.		
15. Regulatory information	ı		
US federal regulations	This product is a "Hazardo Standard, 29 CFR 1910.12		efined by the OSHA Hazard Communication
TSCA Section 12(b) Exp	ort Notification (40 CFR 7	07, Subpt. D)	
Not regulated. CERCLA Hazardous Sul	bstance List (40 CFR 302.4	l)	
2-Pentanone, 4-meth		Listed.	
n-Hexane (CAS 110-		Listed.	
SARA 304 Emergency re	elease notification		
Not regulated. OSHA Specifically Regu	lated Substances (29 CFR	1910.1001-1053)	
Not regulated.			
Toxic Substances Control Act (TSCA)	All components of the mix	ture on the TSCA 8	(b) inventory are designated "active".
Superfund Amendments and Rea	authorization Act of 1986	(SARA)	
SARA 302 Extremely hazard Not listed.	ous substance		
SARA 311/312 Hazardous chemical	Yes		
Classified hazard categories	Flammable (gases, aeroso Serious eye damage or ey Carcinogenicity Reproductive toxicity		5)
SARA 313 (TRI reporting) Chemical name	C	CAS number	% by wt.
2-Pentanone, 4-methyl-		108-10-1	3.8
Other federal regulations			
Clean Air Act (CAA) Section	112 Hazardous Air Polluta	ants (HAPs) List	
2-Pentanone, 4-methyl- (0 n-Hexane (CAS 110-54-3 Clean Air Act (CAA) Section)	Prevention (40 C	FR 68 130)
Not regulated.			
Safe Drinking Water Act (SDWA)	Contains component(s) re	gulated under the S	Safe Drinking Water Act.
		ssential Chemical	s (21 CFR 1310.02(b) and 1310.04(f)(2) and
2-Pentanone, 4-meth	yl- (CAS 108-10-1)	6715 2 Exampt Chamic	al Mixturos (21 CEP 1310 12(c))

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

35 %WV

2-Pentanone, 4-methyl- (CAS 108-10-1)

DEA Exemp	t Chemical Mixtures Code Num	ber	
	none, 4-methyl- (CAS 108-10-1)	6715	
		Ith and Safety in the Flavor Manufacturing Wo	rkplace
	none, 4-methyl- (CAS 108-10-1) ohol (CAS 64-17-5)	Low priority Low priority	
US state regulations			
US. Massachuse	tts RTK - Substance List		
Ethyl alcohol n-Hexane (C	, 4-methyl- (CAS 108-10-1) (CAS 64-17-5) AS 110-54-3) Worker and Community Right-1	to-Know Act	
2-Pentanone Ethyl alcohol	, 4-methyl- (CAS 108-10-1) (CAS 64-17-5) AS 110-54-3)		
	a Worker and Community Righ	t-to-Know Law	
2-Pentanone Ethyl alcohol	, 4-methyl- (CAS 108-10-1) (CAS 64-17-5) AS 110-54-3)		
Ethyl alcohol	, 4-methyl- (CAS 108-10-1) (CAS 64-17-5) AS 110-54-3)		
California Propo			
	RNING: This product can expos	e you to chemicals including 2-Pentanone, 4-methuse cancer and birth defects or other reproductive P65Warnings.ca.gov.	
California P	oposition 65 - CRT: Listed date	e/Carcinogenic substance	
	none, 4-methyl- (CAS 108-10-1) roposition 65 - CRT: Listed date	Listed: November 4, 2011 e/Developmental toxin	
Toluene	none, 4-methyl- (CAS 108-10-1) (CAS 108-88-3) roposition 65 - CRT: Listed date	Listed: March 28, 2014 Listed: January 1, 1991	
	•	Listed: December 15, 2017	
	e (CAS 110-54-3) ia. Candidate Chemicals List. S	afer Consumer Products Regulations (Cal. Co	de Reas. tit. 22. 69502.3.
subd. (a))		······	
	none, 4-methyl- (CAS 108-10-1) e (CAS 110-54-3)		
International Invento	ries		
Country(s) or reg	gion Inventory name		On inventory (yes/no)*
Australia	Australian Inventor	y of Chemical Substances (AICS)	Yes
Canada	Domestic Substance	ces List (DSL)	Yes
Canada	Non-Domestic Sub	stances List (NDSL)	No
China	Inventory of Existin	g Chemical Substances in China (IECSC)	Yes
Europe	European Inventor Substances (EINE	y of Existing Commercial Chemical CS)	Yes
Europe	European List of N	otified Chemical Substances (ELINCS)	No
Japan	Inventory of Existin	g and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals	s List (ECL)	Yes
New Zealand	New Zealand Inver	ntory	Yes
Philippines	Philippine Inventor	y of Chemicals and Chemical Substances	Yes
- ·	T · · · · · ·		

Taiwan Chemical Substance Inventory (TCSI)

Toxic Substances Control Act (TSCA) Inventory

*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).

Taiwan

United States & Puerto Rico

Yes

Yes

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

Issue date	19-November-2018
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.