SUPERIOR

SDS

1. Identification

Product identifier **Ethanol C-200**

Other means of identification

Product code 0300243

Recommended use Solvent

Recommended restrictions None known.

Manufacturer Superior Oil Company, Inc.
1402 North Capitol Avenue, Suite #100
Indianapolis, IN 46202
US
Information (317) 781-4400
Emergency (317) 781-4400

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 2
Health hazards	Not classified.	
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 2
	Hazardous to the aquatic environment, long-term hazard	Category 2
OSHA defined hazards	Not classified.	

Label elements

Signal word Danger

Hazard statement

H225 Highly flammable liquid and vapor.
H401 Toxic to aquatic life.
H411 Toxic to aquatic life with long lasting effects.

Prevention

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 - Keep container tightly closed.
P240 - Ground/bond container and receiving equipment.
P241 - Use explosion-proof electrical/ventilating/lighting equipment.
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P273 - Avoid release to the environment.
P280 - Wear protective gloves/eye protection/face protection.

Response

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P370 + P378 - In case of fire: Use appropriate media to extinguish.
P391 - Collect spillage.

Storage P403 + P235 - Store in a well-ventilated place. Keep cool.

Disposal P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Ethanol		64-17-5	90-100
2-Methyl-4-Pentanone		108-10-1	0.1-10
Ethyl Acetate		141-78-6	0.1-10
Isopropanol		67-63-0	0.1-10

4. First-aid measures

Inhalation	If overexposure to vapors or mist, move to fresh air. Call a physician if breathing becomes difficult.
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. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
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.
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

Suitable extinguishing media	Alcohol resistant foam. Water fog. Carbon dioxide (CO2). Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
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 air. Vapors may travel considerable distance to a source of ignition and flash back. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static electricity accumulation may be significantly increased by the presence of small quantities of water or other contaminants. Material will float and may ignite on surface of water. 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 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. Keep out of low areas. 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. Use appropriate containment to avoid environmental contamination. Transfer by mechanical means such as vacuum truck to a salvage tank or other suitable container for recovery or safe disposal. 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). Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil, etc.) away from spilled material. This product is miscible in water. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent product from entering drains. 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. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground. Use appropriate containment to avoid environmental contamination.

Precautions for safe handling

Vapors may form explosive mixtures with air. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Do not smoke. Minimize fire risks from flammable and combustible materials (including combustible dust and static accumulating liquids) or dangerous reactions with incompatible materials. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. 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 prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Avoid release to the environment. Do not empty into drains.

For additional information on equipment bonding and grounding, refer to the Canadian Electrical Code in Canada, (CSA C22.1), or the American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising out of Static, Lightning, and Stray Currents" or National Fire Protection Association (NFPA) 77, "Recommended Practice on Static Electricity" or National Fire Protection Association (NFPA) 70, "National Electrical Code".

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. Avoid spark promoters. Eliminate sources of ignition. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Store in original tightly closed container. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Keep in an area equipped with sprinklers.

8. Exposure controls/personal protection

Occupational exposure limits

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

Components	Type	Value
2-Methyl-4-Pentanone (CAS 108-10-1)	PEL	410 mg/m3 100 ppm
Ethanol (CAS 64-17-5)	PEL	1900 mg/m3 1000 ppm
Ethyl Acetate (CAS 141-78-6)	PEL	1400 mg/m3 400 ppm
Isopropanol (CAS 67-63-0)	PEL	980 mg/m3 400 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
2-Methyl-4-Pentanone (CAS 108-10-1)	STEL	75 ppm
	TWA	20 ppm
Ethanol (CAS 64-17-5)	STEL	1000 ppm
Ethyl Acetate (CAS 141-78-6)	TWA	400 ppm
Isopropanol (CAS 67-63-0)	STEL	400 ppm
	TWA	200 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
2-Methyl-4-Pentanone (CAS 108-10-1)	STEL	300 mg/m3 75 ppm
	TWA	205 mg/m3 50 ppm
Ethanol (CAS 64-17-5)	TWA	1900 mg/m3 1000 ppm
Ethyl Acetate (CAS 141-78-6)	TWA	1400 mg/m3 400 ppm
Isopropanol (CAS 67-63-0)	STEL	1225 mg/m3 500 ppm

Components	Type	Value
	TWA	980 mg/m3 400 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
2-Methyl-4-Pentanone (CAS 108-10-1)	1 mg/l	Methyl isobutyl ketone	Urine	*
Isopropanol (CAS 67-63-0)	40 mg/l	Acetone	Urine	*

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

Appropriate engineering controls Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) 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.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Hand protection Wear protective gloves.

Skin protection

Other Wear appropriate chemical resistant clothing.

Respiratory protection Wear positive pressure self-contained breathing apparatus (SCBA).

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 Clear.

Physical state Liquid.

Form Liquid.

Color Colorless.

Odor Typical Solvent.

Odor threshold Not available.

pH Not available.

Melting point/freezing point -173.38 °F (-114.1 °C) estimated

Initial boiling point and boiling range 173.3 °F (78.5 °C) approx.

Flash point 25.0 °F (-3.9 °C) Lowest Flashing component

Evaporation rate > 1 (Butyl Acetate = 1)

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure 60.83 hPa (1 hPa = 0.75006 mmHg)

Vapor pressure temp. @ 20 Deg. C

Vapor density > 1 (Air = 1)

Relative density Not available.

Solubility(ies)

Solubility (water) Moderate.

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity Not available.

Flash point class	Flammable IB
Percent volatile	100 %
Specific gravity	0.8
VOC (Weight %)	100 %

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Suitable precautions should be utilized if using this product at temperatures above the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizers and strong acids.
Hazardous decomposition products	No hazardous decomposition products are known if stored and applied as directed.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Expected to be a low ingestion hazard.
Inhalation	Prolonged inhalation may be harmful.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with eyes may cause temporary irritation.
Symptoms related to the physical, chemical and toxicological characteristics	Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity Expected to be a low hazard for usual industrial or commercial handling by trained personnel.

Components	Species	Test Results
2-Methyl-4-Pentanone (CAS 108-10-1)		
Acute		
Dermal		
LD50	Rabbit	> 16000 mg/kg
Inhalation		
LC50	Rat	8.2 mg/l, 4 Hours
Oral		
LD50	Rat	2080 mg/kg
Other		
LD50	Guinea pig	0.919 ml/kg
	Mouse	590 mg/kg
	Rat	1.14 ml/kg
Ethanol (CAS 64-17-5)		
Acute		
Inhalation		
LC50	Mouse	39 mg/l, 4 Hours
	Rat	20000 ppm, 10 Hours
Oral		
LD50	Dog	5.5 g/kg
	Guinea pig	5.6 g/kg
	Mouse	3450 mg/kg
	Rat	6.2 g/kg
Other		
LD50	Mouse	933 mg/kg
	Rat	1440 mg/kg

Ethyl Acetate (CAS 141-78-6)

Acute

Inhalation

LC50	Rat	16000 ppm, 6 Hours
LD50	Mouse	1500 ppm, 4 Hours
	Rabbit	2500 ppm, 4 Hours
	Rat	4000 ppm, 4 Hours

Oral

LD50	Mouse	0.44 g/kg
	Rabbit	4.9 g/kg
	Rat	11.3 ml/kg
		5.6 g/kg

Other

LD50	Cat	3 g/kg
	Guinea pig	3 g/kg

Isopropanol (CAS 67-63-0)

Acute

Dermal

LD50	Rabbit	12800 mg/kg

Oral

LD50	Dog	4797 mg/kg
	Mouse	3600 mg/kg
	Rabbit	5.03 g/kg
	Rat	4.7 g/kg

Other

LD50	Mouse	1509 mg/kg
	Rat	1099 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

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

Respiratory or skin sensitization

Respiratory sensitization Not available.

Skin sensitization 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 This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

2-Methyl-4-Pentanone (CAS 108-10-1) 2B Possibly carcinogenic to humans.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

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

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not available.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.

2-Methyl-4-Pentanone (CAS 108-10-1)

Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	492 - 593 mg/l, 96 hours

Ethanol (CAS 64-17-5)

Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	7.7 - 11.2 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	> 100 mg/l, 96 hours

Ethyl Acetate (CAS 141-78-6)

Aquatic			
Fish	LC50	Indian catfish (Heteropneustes fossilis)	200.32 - 225.42 mg/l, 96 hours

Isopropanol (CAS 67-63-0)

Aquatic			
Fish	LC50	Bluegill (Lepomis macrochirus)	> 1400 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

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

Bioaccumulative potential No data available.

Partition coefficient n-octanol / water (log Kow)

2-Methyl-4-Pentanone	1.31
Ethyl Acetate	0.68 Measured Estimated
Isopropanol	0.05

Mobility in soil No data available.

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. This material and its container must be disposed of as hazardous waste. 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.

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 Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT BULK

UN number	1170
Proper shipping name	Ethanol Solutions
Hazard class	3
Packing group	II
ERG code	127

DOT NON-BULK

UN number	1170
Proper shipping name	Ethanol Solutions
Hazard class	3
Packing group	II
ERG code	127

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

CERCLA Hazardous Substance List (40 CFR 302.4)

2-Methyl-4-Pentanone (CAS 108-10-1) Listed.

Ethyl Acetate (CAS 141-78-6) Listed.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
2-Methyl-4-Pentanone	108-10-1	0.1-10

Other federal regulations

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

2-Methyl-4-Pentanone (CAS 108-10-1)

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

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

DEA Essential Chemical Code Number

2-Methyl-4-Pentanone (CAS 108-10-1) 6715

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

2-Methyl-4-Pentanone (CAS 108-10-1) 35 %WV

DEA Exempt Chemical Mixtures Code Number

2-Methyl-4-Pentanone (CAS 108-10-1) 6715

US state regulations

US. Massachusetts RTK - Substance List

2-Methyl-4-Pentanone (CAS 108-10-1)
Ethanol (CAS 64-17-5)
Ethyl Acetate (CAS 141-78-6)
Isopropanol (CAS 67-63-0)

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

2-Methyl-4-Pentanone (CAS 108-10-1) 500 LBS

US. Pennsylvania RTK - Hazardous Substances

2-Methyl-4-Pentanone (CAS 108-10-1)
Ethanol (CAS 64-17-5)
Ethyl Acetate (CAS 141-78-6)
Isopropanol (CAS 67-63-0)

US. Rhode Island RTK

2-Methyl-4-Pentanone (CAS 108-10-1)
Ethyl Acetate (CAS 141-78-6)
Isopropanol (CAS 67-63-0)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

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

2-Methyl-4-Pentanone (CAS 108-10-1) Listed: November 4, 2011
Ethanol (CAS 64-17-5) Listed: April 29, 2011
Listed: July 1, 1988

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

2-Methyl-4-Pentanone (CAS 108-10-1) Listed: March 28, 2014

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
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
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, including date of preparation or last revision

Issue date 01-15-2015

Version # 01

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Revision Information Product and Company Identification: Product and Company Identification
Hazards Identification: US Hazard Categories
Physical & Chemical Properties: Multiple Properties
Transport Information: Material Transportation Information
Regulatory Information: United States