



(Material) Safety Data Sheet

NFPA	WHMIS	Personal Protective Equipment	Transport Symbol

Original Preparation Date:
10-Sep-2010

Revision Date: 14-Feb-2013

Revision Number: 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name:

Pure 190 Ethanol, USP Excipient Grade

Use of the Substance / Preparation:

Industrial use.

Contact Manufacturer:

Archer Daniels Midland Company

4666 Faries Parkway

Decatur, IL 62526, USA

Telephone Number: (+1) 217-424-5200

Product Code:

017635

Emergency response telephone number:

Chemtrec 1-800-424-9300 (CCN 1635)

2. HAZARDS IDENTIFICATION

Emergency Overview

Danger. Highly flammable liquid and vapour. May be harmful if swallowed. Vapors may be irritating to eyes, nose, throat, and lungs. Not for human consumption.

Appearance

Clear Bright

Physical State

Liquid

Odor

Characteristic

Potential Health Effects

Principle Routes of Exposure

Eye contact. Skin contact. Inhalation. Ingestion.

Acute Effects

Eyes

Irritating to eyes. Contact with eyes may cause tearing or redness. Stinging. Burning sensation.

Skin

May cause skin irritation. Repeated exposure may cause skin dryness or cracking. Dermal uptake of ethanol is very low.

Inhalation

Inhalation of vapors in high concentration may cause irritation of respiratory system. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. In humans, ethanol is readily absorbed by the oral and inhalation routes, is distributed throughout all tissues and organs and is readily, metabolized and excreted. At exposures relevant to occupational inhalation exposure, the alcohol dehydrogenase metabolic route in the liver dominates and does not become saturated. Ethanol is not accumulated in the body.

Ingestion

Ingestion may cause irritation to mucous membranes. May cause drowsiness and dizziness. Lack of coordination. Nausea. Vomiting. Abdominal pain. Unconsciousness. Very severe cases of overexposure may result in coma.

Chronic Effects

Avoid repeated exposure.

Main Symptoms

Dizziness. Nausea. Vomiting. Coma.

Aggravated Medical Conditions

Liver disorders. Kidney disorders. Skin disorders. Central nervous system. Respiratory disorders. Blood disorders.

Potential Environmental Effects

See Section 12 for additional ecological information.


Toxicological information

See Section 11 for additional toxicological information.

Classification according to 29 CFR 1910, amended to conform to the United Nations' Globally Harmonized System of Classification and Labelling of Chemicals (GHS):

Serious Eye Damage / Eye Irritation Category 2

OSHA / GHS Label Elements

Signal Word:	Danger
Hazard Statement(s):	H225 Highly flammable liquid and vapour H319 Causes serious eye irritation
GHS Hazard Pictogram(s):	

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Family Alcohols

The following component(s) in this product are considered hazardous under applicable OSHA (USA), WHMIS (Canada), and/or NOM-002-SCT-2003 (Mexico) regulations

Chemical Name	CAS-No	Weight %	North American Hazard Indicator
Ethyl alcohol	64-17-5	95	OSHA / GHS: Flam. Liq. 2. Eye Irrit. 2. WHMIS: B2. D2B.

Non-hazardous Components

Chemical Name	CAS-No	Weight %	North American Hazard Indicator
Water	7732-18-5	5	-

Contains less than 0.1% of the following: Methanol. Acetaldehyde. Acetone.

4. FIRST AID MEASURES

General Advice	If symptoms persist, call a physician.
Eye Contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eyes wide open while rinsing. If symptoms persist, call a physician.
Skin Contact	If skin irritation persists, call a physician. Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes.
Inhalation	Move to fresh air in case of accidental inhalation of vapors. If symptoms persist, call a physician. Artificial respiration and/or oxygen may be necessary.
Ingestion	Clean mouth with water and afterwards drink plenty of water. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.
Notes to Physician	Treat symptomatically.
Protection of First-aiders	Use personal protective equipment. Remove all sources of ignition.

5. FIRE-FIGHTING MEASURES

Flammable Properties	Flammable liquid. Vapors may form explosive mixtures with air. Vapors may cause flash fire or explosion. Material may pose fire hazard because it is dispersed (or spread) by water.
Suitable Extinguishing Media	Alcohol-resistant foam. Dry chemical. Carbon dioxide (CO ₂) Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Evacuate area and fight fire from a safe distance Cool closed containers exposed to fire with water spray
Unsuitable Extinguishing Media	Do not use a solid water stream as it may scatter and spread fire.
Hazardous Combustion Products	Carbon monoxide (CO), Carbon dioxide (CO ₂), Thermal decomposition can lead to release of irritating gases and vapors.
Explosion Data	
Sensitivity to mechanical impact	No information available.

Sensitivity to static discharge	Yes
Specific Hazards Arising from the Chemical	Keep product and empty container away from heat and sources of ignition. Risk of ignition.
Protective Equipment and Precautions for Firefighters	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health 2
Flammability 3

Stability and Reactivity 0
Physical hazard None known



6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Pay attention to flashback. Take precautionary measures against static discharges. Use personal protective equipment.
Environmental Precautions	Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.
Methods for Clean-up	Small spills: Allow to evaporate if it is safe to do so or contain and absorb using earth, sand or other inert material then transfer into suitable containers for recovery or disposal. Ventilate contaminated area thoroughly. Use non-sparking tools. Do not use electrical equipment unless it is intrinsically safe. Large spills: Dike or dam to contain for later disposal. Cover drains. Contact emergency authorities.

7. HANDLING AND STORAGE

Handling	Take precautionary measures against static discharges. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from open flames, hot surfaces and sources of ignition. Wear personal protective equipment. Do not breathe vapors or spray mist. Use only in area provided with appropriate exhaust ventilation. Use product only in closed system.
Storage	Keep in properly labelled containers. Keep away from heat and sources of ignition. Keep containers tightly closed in a cool, well-ventilated place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits

Components with workplace control parameters.

Chemical Name	ACGIH TLV	OSHA PEL	MEXICO	NIOSH
Ethyl alcohol	STEL: 1000 ppm	TWA: 1000 ppm TWA: 1900 mg/m ³	TWA: 1000 ppm TWA: 1900 mg/m ³	IDLH: 3300 ppm 10% LEL TWA: 1000 ppm TWA: 1900 mg/m ³

Legend

ACGIH TLV - American Conference of Governmental Industrial Hygienists Threshold Limit Values. TWA - Time weighted average. Ceiling - Ceiling Limit Value. STEL - Short Term Exposure Limit. OSHA PEL - Occupational Safety and Health Administration Permissible Exposure Limits. NIOSH IDLH - National Institute of Occupational Safety and Health Immediately Dangerous to Life or Health. LEL - Lower explosion limit. Skin - Skin Absorption. OSHA - Ontario Occupational Health and Safety Act Exposure Limits. MEXICO - Mexico Occupational Exposure Limits.

Engineering Measures	Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location. Apply technical measures to comply with the occupational exposure limits.
General Hygiene Considerations	When using, do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing. Handle in accordance with good industrial hygiene and safety practice.
Personal Protective Equipment Eye/face Protection.	Tightly fitting safety goggles. Face-shield.

Skin and Body Protection	Long sleeved clothing. Chemical resistant apron. Antistatic boots. Neoprene gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used. Appropriate body protection should be selected based on activity and possible exposure.
Respiratory Protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Wear a positive-pressure supplied-air respirator with full facepiece.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear Bright
Physical State	Liquid
Odor	Characteristic
Odor Threshold	No information available
pH	No information available 7.5
Flash Point	17.000 °C / 62 °F
Autoignition Temperature	No information available
Boiling point	80.000 °C / 176.000 °F
Melting/Freezing Point	No information available
Decomposition temperature	No information available
Oxidizing Properties	No information available
Flammability Limits in Air	Upper: 19% Lower: 3.3%
Specific Gravity	0.82 at 60F (Water = 1.0)
Water Solubility	Miscible
Evaporation Rate	3.0 [Butyl acetate = 1.0]
Vapor Pressure	41.4 mmHg
Vapor Density	1.6 at 172°F (Air = 1.0)
Partition Coefficient (n-octanol/water)	No information available

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal conditions.
Conditions to Avoid	Heat, flames and sparks. Incompatible products.
Incompatible Materials	Strong oxidizing agents. Inorganic substances. Strong acids. Alkali. Bromine pentafluoride. Ammonia. Peroxides. Perchlorates.
Hazardous Decomposition Products	Thermal decomposition may lead to release of. Carbon oxides.
Possibility of Hazardous Reactions	Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity**Product Information**

LD50 Oral: No information available

LD50 Dermal: No information available

LC50 Inhalation: No information available

Chemical Name	Weight %	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ethyl alcohol	95	7060 mg/kg Rat		

Chronic Effects**Carcinogenicity**

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	Weight %	OSHA	ACGIH	NTP	MEXICO	IARC
Ethyl alcohol	95	Present	A3		A4	Group 1

*NOTE: Ethanol is only classified as carcinogenic as ingested in alcoholic beverages.***Legend****OSHA: (Occupational Safety & Health Administration)**

Present - Carcinogen or potential carcinogen to be identified under OSHA's Hazard Communication Standard

ACGIH: (American Conference of Governmental Industrial Hygienists)

A3 - Animal Carcinogen.

NTP: (National Toxicity Program)

Not Listed

Mexico: (Official Mexican Norm NOM-010-STPS-1999)

A4 - Not Classifiable as a Human Carcinogen.

IARC: (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Irritation

Rabbit eye: 500 mg / 24H MLD (ethanol)

Corrosivity

No information available.

Rabbit skin: 20 mg / 24H MOD (ethanol)

Sensitization

No information available.

Neurological Effects

No information available.

Mutagenic Effects

No information available.

Reproductive Effects

May damage fertility or the unborn child through ingestion.

Developmental Effects

No information available.

Target Organ Effects

Liver. Respiratory system. Eyes. Skin. Central nervous system (CNS). Blood. Reproductive System.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects

Component Information:

Chemical Name	Weight %	Acute Fish Toxicity	Daphnia (Water flea)	Fresh Water Algae	Other
Ethyl alcohol	95	LC50 (96hr) Salmo gairdneri: 13g/l; Pimephales promelas: 13.5, 14.2 and 15.3g/l.	(48hr) Daphnia Magna: 12.34g/l; NOEC (reproduction, 21 days): >10mg/l. Ceriodaphnia dubia: EC50 (48hrs): 5.012g/l; NOEC (reproduction, 10 days): 9.6mg/l. Palaemonetes pugio NOEC (developmental, 10 days): 79mg/l.	Chlorella vulgaris, 72hr: EC50 275mg/l, EC10 11.5mg/l; Selenastrum capricornutum, 72hr, EC50: 12.9g/l, EC10=0.44g/l; Chlamydomonas eugametos, 48hr, EC50: 18g/l, NOEC=7.9g/l	

Chemical Name	Weight %	log Kow
Ethyl alcohol	95	-0.32

Persistence/Degradability The product is readily biodegradable. BOD20=84%. Substance is expected to degrade readily in sewage treatment plants.

Bioaccumulation/ Accumulation No information available.

Mobility If released to air or water the product will disperse rapidly. If released to soil it will evaporate at a rapid rate. The product is volatile and water soluble. If released to the environment it will partition to air and water. The product is poorly absorbed on to soil or sediments.

13. DISPOSAL CONSIDERATIONS

Whenever possible, as rules and regulations allow, please recycle or manage materials to minimize waste.

Waste Disposal Methods Dispose of in compliance with the laws and regulations pertaining to this product in your jurisdiction. Can be incinerated, when in compliance with local regulations. The classification and disposal method of waste material resulting from this product should be determined by the user at the time of disposal. Seek guidance from a qualified person or service within your local jurisdiction. Hazardous as supplied. The classification and disposal method of waste material resulting from this product should be determined by the user at the time of disposal.

Contaminated Packaging Empty containers may contain hazardous residues. Do not cut, puncture or weld on or near to the container. Labels should not be removed from containers until they have been cleaned. Contaminated containers must not be treated as household waste. Containers should be cleaned by appropriate methods and then re-used or disposed of by landfill or incineration as appropriate. Do not incinerate closed containers.

14. TRANSPORT INFORMATION

Domestic transport regulations (USA)

DOT

DOT Shipping Description	UN1170, Ethanol, 3, II
UN-No	UN1170
Proper Shipping Name	Ethanol
Hazard Class	3
Packing Group	II

Chemical Name	CAS-No	Weight %	Reportable Quantity (RQ)
Methyl alcohol	67-56-1	TRACE (0.015)	5000 lb / 2270 kg
Acetaldehyde	75-07-0	TRACE (0.002)	1000 lb. / 454 kg.

Acetone	67-64-1	TRACE (0.0004)	5000 lb / 2270 kg
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Domestic transport regulations (Canada)**TDG**

UN-No	UN1170
Proper Shipping Name	ETHANOL more than 24% ethanol, by volume
Hazard Class	3
Packing Group	II

Domestic transport regulations (Mexico)**MEX**

UN-No	UN1170
Proper Shipping Name	Etanol
Hazard Class	3
Packing Group	II

International transport regulations**ICAO**

UN-No	UN1170
Proper Shipping Name	Ethanol
Hazard Class	3
Packing Group	II

IATA

UN-No	UN1170
Proper Shipping Name	Ethanol
Hazard Class	3
Packing Group	II
ERG Code	3L

IMDG/IMO

UN-No	UN1170
Proper Shipping Name	Ethanol (Ethyl alcohol)
Hazard Class	3
Packing Group	II
EmS No.	F-E, S-D

15. REGULATORY INFORMATION

International Inventories

The components of this product are reported in the following inventories:

Chemical Name	TSCA	DSL	NDSL	EINECS	ELINCS	AICS	ENCS ISHL	CHINA	PICCS	KECL	NZIoC
Ethyl alcohol	Yes	Yes	No	Yes 200-578-6	No	Yes	Yes 2-202	Yes	Yes	Yes KE-13217	Yes

Legend

TSCA - Toxic Substances Control Act, Section 8(b) Inventory (USA). DSL - Domestic Substance List (Canada). NDSL - Non Domestic Substances List (Canada). EINECS - European Inventory of Existing Commercial Chemical Substances (EU). ELINCS - European List of Notified Chemical Substances (EU). AICS - Australian Inventory of Chemical Substances (Australia). ENCS - Existing and New Chemical Substances (Japan). ISHL - Industrial Health and Safety Law (Japan). CHINA - Chinese Inventory of Existing Chemical Substances (China). PICCS - Inventory of Chemicals and Chemical Substances (Philippines). KECL - Korean Existing and Evaluated Chemical Substances (Korea). NZLoC - New Zealand Inventory of Chemicals (New Zealand).

USA**Federal Regulations****Ozone Depleting Substances:**

No Class I or Class II material is known to be used in the manufacture of, or contained in, this product.

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product is not known to contain any chemicals which are subject to the reporting requirements of the Act or regulations contained in 40 CFR 372.

SARA 302

Section 302 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product is not known to contain chemicals at levels which are expected to be subject to the reporting requirements of the Act or regulations contained in 40 CFR 302

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 63)

This product is known to contain the following HAPs:

Chemical Name	CAS-No	Weight %	HAPS
Methyl alcohol	67-56-1	TRACE (0.015)	Present
Acetaldehyde	75-07-0	TRACE (0.002)	Present

State Regulations**California Proposition 65**

This product is known to contain the following Proposition 65 chemicals:

Chemical Name	CAS-No	Weight %	Category
Ethyl alcohol	64-17-5	95	Developmental
Methyl alcohol	67-56-1	TRACE (0.015)	Developmental
Acetaldehyde	75-07-0	TRACE (0.002)	Carcinogen

• Ethanol is only considered a Prop 65 chemical as "ethyl alcohol IN alcoholic beverages" and not as used in fuel or industrial applications

State Right-to-Know

Component Information

Chemical Name	Weight %	Massachusetts	Minnesota	New Jersey	Pennsylvania
Ethyl alcohol	95	Yes	Yes	Yes 0844	Yes
Methyl alcohol	TRACE (0.015)	Yes	Yes	Yes 1222	Yes Environmental hazard
Acetaldehyde	TRACE (0.002)	Yes	Yes	Yes 0001	Yes
Acetone	TRACE (0.0004)	Yes	Yes	Yes 0006	Yes Environmental hazard

Canada**WHMIS Product Classification**

B2 - Flammable liquid. D2B - Materials causing other toxic effects, toxic material.

WHMIS Ingredient Disclosure List IDL

Component Information

Chemical Name	Weight %	WHMIS IDL	WHMIS Threshold limits
Ethyl alcohol	95	Listed	0.1%

(NPRI) Canadian National Pollutant Release Inventory

Component Information

Chemical Name	Weight %	NPRI
Ethyl alcohol	95	Part 5 Substance
Methyl alcohol	TRACE (0.015)	Part 1, Group 1 Substance; Part 5 Substance
Acetaldehyde	TRACE (0.002)	Part 1, Group 1 Substance Part 4 Substance
Acetone	TRACE (0.0004)	Part 4 Substance

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.

Mexico**Mexico - Grade**

Serious risk, Grade 3

16. OTHER INFORMATION

Prepared By:	ADM Fuels & Industrials
Original Preparation Date:	10-Sep-2010
Revision Date:	14-Feb-2013
Revision Number:	1
Revision Summary	New SDS format: Hazard classification updated: This version replaces all previous versions
Expiration Date:	14-Feb-2015

The information provided on this (M)SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of (M)SDS