



(Material) Safety Data Sheet

Transport Symbol	WHMIS	NFPA	Personal Protective Equipment

Original Preparation Date: 22-Feb-2010

Revision Date: 13-Feb-2014

Revision Number: 4

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product Name:
Synasol 190 Proof PM 3224

Product Code:
017758

Contact Manufacturer:
Archer Daniels Midland Company
4666 Faries Parkway
Decatur, IL 62526, USA

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

Emergency response telephone number:
Chemtrec 1-800-424-9300 (CCN 1635)

Use of the Substance / Preparation :
Industrial use

2. HAZARDS IDENTIFICATION

Emergency Overview

Danger. Highly flammable liquid and vapour. Vapors may be irritating to eyes, nose, throat, and lungs. May be harmful if swallowed. Not for human consumption. Inhalation, ingestion or skin absorption of methanol can cause significant disturbance in vision, including blindness. Contains > 0.1% of a category 2 carcinogen.

Appearance
Clear Bright

Physical State
Liquid

Odor
Characteristic

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
Carcinogenicity	Category 2
Specific Target Organ Toxicity (STOT) Single Exposure.	Category 1 Affected organs: Optic nerve (nervus opticus), central nervous system.
Flammable Liquids	Category 2

OSHA / GHS Label Elements

Signal Word:	Danger
GHS Hazard Pictogram(s):	
Hazard Statement(s):	H225 Highly flammable liquid and vapour H319 Causes serious eye irritation H370 Causes Damage to organs. (Affected organs: Optic nerve (nervus opticus), central nervous system.) H351 Suspected of causing cancer

Prevention Precautionary Statements:

Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static charges. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe fume/gas/mist/vapours/spray. Wash hands and exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Response Precautionary Statements:

If on skin (or hair): Take off immediately, all contaminated clothing. Rinse skin with water. 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. If exposed or concerned: Get medical advice/attention. In case of fire: Use Alcohol-resistant foam / dry chemical / carbon dioxide (CO₂) to extinguish. Do not use a solid water stream as it may scatter and spread fire.

Storage Precautionary Statements:

Store in a well-ventilated place. Keep cool. Store locked up.

Disposal Precautionary Statements:

Dispose of contents/container in accordance with all applicable national and local regulations.

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	Volume %	North American Hazard Indicator
Ethyl alcohol	64-17-5	85.4	OSHA / GHS: Flam. Liq. 2. Eye Irrit. 2. WHMIS: B2. D2B.
Methyl alcohol	67-56-1	3.61	OSHA / GHS: Flam. Liq. 3. Acute Tox. 3. (oral) (dermal) (inhalation). STOT SE, Cat. 1. Affected organs: Optic nerve (nervus opticus), central nervous system. WHMIS: D1B, D2A, D2B. B2.
Methylisobutyl ketone	108-10-1	1.87	OSHA / GHS: Flam. Liq. 2. Eye Irrit. 2. Acute Tox. 4. (inhalation) Carc. 2. STOT SE 3. WHMIS: B2. D2A. (Carcinogen) IDL (0.1%)
Ethyl acetate	141-78-6	1.29	OSHA / GHS: Flam. Liq. 2. Eye Irrit. 2. STOT SE 3. WHMIS: B2.
Naphtha, petroleum, hydrotreated light	64742-49-0	0.8	OSHA / GHS: Asp. Tox. 1. Muta. 1B. Carc. 1B. WHMIS: Not Determined. Classification as a carcinogen or mutagen need not apply if it can be shown that the substance/mixture contains less than 0.1 % benzene. This note applies only to certain complex oil-derived substances.

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

4. FIRST AID MEASURES

Description of first aid measures

General Advice When symptoms persist or in all cases of doubt seek medical advice.

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. Seek Medical advice.

Skin Contact Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Consult a physician if necessary.

Inhalation Move to fresh air in case of accidental inhalation of vapors. Artificial respiration and/or oxygen may be necessary. Call a physician immediately.

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. Call a physician or Poison Control Centre immediately. Swallowing methanol in significant quantities can be potentially life threatening. Onset of symptoms may be delayed for up to 18-24 hours after ingestion.

Protection of First-aiders Use personal protective equipment. Remove all sources of ignition.

Most important symptoms and affects, both acute and delayed

Eyes Irritating to eyes. Contact with eyes may cause tearing or redness. Stinging. Burning sensation. Inhalation, ingestion or skin absorption of methanol can cause significant disturbance in vision, including blindness.

Skin May cause skin irritation. Repeated exposure may cause skin dryness or cracking. Dermal uptake of ethanol is very low. Methanol may be absorbed through the skin which can contribute to damage to the optic nerve resulting in permanent vision changes, loss of vision, or total blindness.

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. Inhalation of methanol can cause significant disturbance in vision, including blindness.

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. Ingestion of methanol may be fatal or cause blindness.

Main Symptoms Dizziness. Vomiting. Nausea. Drowsiness. Severe vision effects, including increased sensitivity to light, blurred vision, and blindness may develop following an 18-24 hour symptom-free period after ingestion. Coma.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Contains methanol. Acute exposure to methanol, either through ingestion or breathing high airborne concentrations can result in symptoms appearing between 40 minutes and 72 hours after exposure. Symptoms and signs are usually limited to the Central Nervous System (CNS), eyes and gastrointestinal tract. A profound metabolic acidosis occurs in severe poisoning and serum bicarbonate levels are a more accurate measure of severity than serum methanol levels. Treatment protocols are available from most major hospitals and early collaboration with appropriate hospitals is recommended. Ethanol significantly decreases the toxicity of methanol because it competes for the same metabolic enzymes, and has been used to treat methanol poisoning.

5. FIRE-FIGHTING MEASURES

Flammable Properties

Flammable liquid. Vapors may cause flash fire or explosion. Vapors may form explosive mixtures with air. Material may pose fire hazard because it is dispersed (or spread) by water.

Extinguishing media

Suitable Extinguishing Media Alcohol-resistant foam. Dry chemical. Carbon dioxide (CO₂). 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.

Special hazards arising from the substance or mixture

Hazardous Combustion Products Thermal decomposition can lead to release of irritating gases and vapors, Carbon monoxide (CO), Carbon dioxide (CO₂).

Specific Hazards Arising from the Chemical Keep product and empty container away from heat and sources of ignition. Risk of ignition.

Sensitivity to mechanical impact No information available.

Sensitivity to static discharge Yes.

Advice for fire-fighters

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. Take precautionary measures against static discharges. Pay attention to flashback. 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

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
Methyl alcohol	STEL: 250 ppm TWA: 200 ppm	TWA: 200 ppm TWA: 260 mg/m ³	STEL: 250 ppm STEL: 310 mg/m ³ TWA: 200 ppm TWA: 260 mg/m ³	IDLH: 6000 ppm Skin STEL: 250 ppm STEL: 325 mg/m ³ TWA: 200 ppm TWA: 260 mg/m ³
Methylisobutyl ketone	STEL: 75 ppm TWA: 20 ppm	TWA: 100 ppm TWA: 410 mg/m ³	STEL: 75 ppm STEL: 307 mg/m ³ TWA: 50 ppm TWA: 205 mg/m ³	IDLH: 500 ppm STEL: 75 ppm STEL: 300 mg/m ³ TWA: 50 ppm TWA: 205 mg/m ³
Ethyl acetate	TWA: 400 ppm	TWA: 400 ppm TWA: 1400 mg/m ³	TWA: 400 ppm TWA: 1400 mg/m ³	IDLH: 2000 ppm 10% LEL TWA: 400 ppm TWA: 1400 mg/m ³

Engineering Measures

Ensure adequate ventilation, especially in confined areas. Apply technical measures to comply with the occupational exposure limits. Ensure that eyewash stations and safety showers are close to the workstation location.

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. Appropriate body protection should be selected based on activity and possible exposure. 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.

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

Flash Point

14 °C / 57 °F (Open Cup)

Autoignition Temperature

No information available

Boiling point

77 °C / 171 °F

Melting/Freezing Point

No information available

Decomposition temperature

No information available

Oxidizing Properties

No information available

Flammability Limits in Air

Upper: 36% (Methanol)
Lower: 3.3% (Ethanol)

Water Solubility

Miscible

Evaporation Rate	3.6 [Butyl acetate = 1.0]
Vapor Pressure	48.4 mmHg
Vapor Density	1.6 at 172°F (Air = 1.0)
Specific Gravity / Relative Density	0.811 at 20°C (Water = 1.0)
Partition Coefficient (n-octanol/water)	No information available

10. STABILITY AND REACTIVITY

Reactivity May react violently with very strong oxidising agents.

Stability Stable under normal conditions.

Possibility of Hazardous Reactions Hazardous polymerization does not occur.

Conditions to Avoid Heat, flames and sparks. Incompatible products.

Incompatible Materials Strong oxidizing agents. Strong mineral acids. Aluminium at higher temperatures.

Hazardous Decomposition Products Thermal decomposition can lead to release of irritating gases and vapors, Carbon monoxide (CO), Carbon dioxide (CO₂).

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity	Ingestion, inhalation, or dermal absorption of even small amounts of methanol may result in methanol poisoning. The minimal lethal dose of methanol in humans has not been fully determined at this time. Ethanol significantly decreases the toxicity of methanol because it competes for the same metabolic enzymes, and has been used to treat methanol poisoning. Due to the nature of the product constituents, sufficient data has not yet been identified to classify the mixture as a whole for acute toxicity. Appropriate care should be taken to avoid oral, dermal, and inhalation exposure.
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Chemical Name	Volume %	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ethyl alcohol	85.4	7060 mg/kg Rat		
Methyl alcohol	3.61	5628 mg/kg Rat	15800 mg/kg Rabbit	64000 ppm Rat 4 h 83.2 mg/L Rat 4 h
Methylisobutyl ketone	1.87	2080 mg/kg Rat	16000 mg/kg Rabbit	8.2 mg/L Rat 4 h
Ethyl acetate	1.29	5620 mg/kg Rat	18000 mg/kg Rabbit 20 mL/kg Rabbit	

Skin corrosion/irritation	Based on available data, the classification criteria are not met. All available acute 4 hour exposure studies for ethanol show not irritating in animals (OECD404 or equivalent) and humans. In humans, repeated dose studies for ethanol show no irritation with repeated application over a whole day under occlusive conditions for up to 12 days. Further exposures cause irritation to occur.
Serious eye damage/eye irritation	Eye Irritating. Cat2 (H319). For ethanol, studies according to OECD guideline 405 generally cause moderate eye irritation. All effects disappear within 8-14 days. The level of conjunctival response is sufficient to require classification as a category 2 irritant.
Respiratory or skin sensitisation	Based on available data, the classification criteria are not met. Mouse swelling study: negative (ethanol) Local Lymph Node Assay (OECD429): Negative (ethanol) Guinea Pig maximisation study: (OECD406) Negative (ethanol) Respiration sensitisation: no data available. (ethanol).

Germ cell mutagenicity	Based on available data, the classification criteria are not met. Bacterial reverse mutation studies (OECD471) for ethanol: all negative In vitro cytogenicity studies (eg OECD473) for ethanol: negative without metabolic activation. No studies available with metabolic activation. In vitro mammalian cell gene mutation studies (OECD476) for ethanol: negative with and without metabolic activation. In vivo micronucleus test (OECD474) for ethanol: no convincing evidence that ethanol causes micronuclei in the bone marrow. In vivo chromosome aberration test (OECD475) for ethanol: negative. Dominant Lethal assay (OECD478): Ethanol is unlikely to produce an effect up to the maximum tolerated dose. There is some evidence from in vitro studies that ethanol can cause genotoxic or clastogenic effects. However, the effects seen are weak and only occur at very high doses. The balance of evidence is that ethanol is not genotoxic.				
Carcinogenicity	Contains > 0.1% of a category 2 carcinogen. Naphtha (petroleum), hydrotreated light in this product contains less than 0.1% benzene are does not meet classification criteria as a carcinogen or mutagen. Rats: NOAEL>3000mg/kg (ethanol) Mice: Females NOAEL>4400mg/kg, Males NOAEL>4250mg/kg based on historic control data, BMDL10=1400mg/kg based on concurrent control data. (ethanol) In humans, the consumption of alcoholic beverages is associated with an increased incidence of certain tumours. There is no evidence that the exposure of humans to ethanol other than by repeated consumption of alcoholic beverages may result in an increase in cancer incidence. The table below indicates whether each agency has listed any ingredient as a carcinogen. NOTE: Ethanol is only classified as carcinogenic as ingested in alcoholic beverages.				
Chemical Name	Volume %	OSHA	NTP	ACGIH	IARC
Ethyl alcohol	85.4	Present	Known	A3 - Confirmed Animal Carcinogen	Group 1 - Carcinogenic to Humans
Methylisobutyl ketone	1.87			A3 - Confirmed Animal Carcinogen	Group 2B - Possibly Carcinogenic to Humans
Reproductive toxicity	Based on available data, the classification criteria are not met FERTILITY (for ethanol): NOAEL (oral, mouse) = 13.8g/kg (OECD416 equiv.) NOAEC (inhalation, rat) >16,000ppm DEVELOPMENTAL TOXICITY (OECD414 equiv): NOAEL (oral) = 5.2g/kgbw/day NOAEC (inhalation) = 39mg/l. Source IUCLID chapter 7.8 summary In humans excessive consumption of alcoholic beverages during pregnancy is associated with the induction of Fetal Alcohol Syndrome in the offspring causing reduced birth weight and physical and mental defect to occur. There is no evidence that such effects might be caused by exposures other than direct ingestion of alcoholic drinks. Blood ethanol concentrations resulting from ethanol exposure by any route other than deliberate and repeated oral consumption are unlikely to reach levels associated with reproductive or developmental effects. From the available data, it can be concluded that it is impossible to reach the doses of ethanol required to produce any sort of adverse reproductive response other than by repeated oral consumption of large amounts of ethanol, doses normally only associated with problem drinking, and therefore classification for reproductive or developmental toxicity in the context of a chemical substance is not appropriate or warranted.				
STOT - single exposure	STOT SE, Cat. 1. Affected organs: Optic nerve (nervus opticus), central nervous system. (Classification is based on available literature data for the significant mixture components).				
STOT - repeated exposure	Based on available data, the classification criteria are not met. In sub-chronic feeding or drinking water studies in rats, NOAELs for ethanol ranged from 1.73g/kg to 3.9g/kg. The most sensitive affect above these doses appeared to be to the kidney in males. Effects are only seen at doses well above the levels that would require classification.				
Aspiration hazard	Based on available data, no known aspiration hazard.				

Potential health effects

Eyes	Irritating to eyes. Contact with eyes may cause tearing or redness. Stinging. Burning sensation. Inhalation, ingestion or skin absorption of methanol can cause significant disturbance in vision, including blindness.
Skin	May cause skin irritation. Repeated exposure may cause skin dryness or cracking. Dermal uptake of ethanol is very low. Methanol may be absorbed through the skin which can contribute to damage to the optic nerve resulting in permanent vision changes, loss of vision, or total blindness.
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. Inhalation of methanol can cause significant disturbance in vision, including blindness.
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. Ingestion of methanol may be fatal or cause blindness.
Main Symptoms	Dizziness. Vomiting. Nausea. Drowsiness. Severe vision effects, including increased sensitivity to light, blurred vision, and blindness may develop following an 18-24 hour symptom-free period after ingestion. Coma.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Undetermined on the product level. We have no quantitative data concerning the ecological effects of this product. Component Information:

Chemical Name	Fresh Water Algae	Acute Fish Toxicity	Daphnia (Water flea)	Effects on micro-organisms	Other
Ethyl alcohol	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	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.		
Methyl alcohol		LC50: 96h 18-20ml/L (Oncorhynchus mykiss) static LC50: 96h 19500-20700mg/L (Oncorhynchus mykiss) flow-through			
Methylisobutyl ketone	EC50: 96h 400 mg/L (Pseudokirchneriella subcapitata)	LC50: 96h 496-514mg/L (Pimephales promelas) flow-through	EC50: 48h 170 mg/L (Daphnia magna)		
Ethyl acetate	EC50: 48h 3300 mg/L (Desmodesmus subspicatus)	LC50: 96h 220-250mg/L (Pimephales promelas) flow-through LC50: 96h 352-500mg/L (Oncorhynchus mykiss) semi-static LC50: 96h 484mg/L (Oncorhynchus mykiss) flow-through	EC50: 48h 560 mg/L (Daphnia magna)		
Naphtha, petroleum, hydrotreated light			LC50: 96h 2.6 mg/L (Chaetogammarus marinus)		

Bioaccumulative Potential

Based on the partition coefficient, ethanol has a low bioaccumulation potential.

Chemical Name	log Kow	BCF
Ethyl alcohol	-0.32	
Methyl alcohol	-0.77	
Methylisobutyl ketone	1.19	
Ethyl acetate	0.6	

Persistence/Degradability Mobility

Expected to be biodegradable.

If released to air or water ethanol will disperse rapidly. If released to soil it will evaporate at a rapid rate. Ethanol is volatile and water soluble. If released to the environment it will partition to air and water. Ethanol 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. 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. Can be incinerated, when in compliance with local regulations.
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

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



Chemical Name	CAS-No	Volume %	Reportable Quantity (RQ)
Methyl alcohol	67-56-1	3.61	5000 lb / 2270 kg
Methylisobutyl ketone	108-10-1	1.87	5000 lb / 2270 kg
Ethyl acetate	141-78-6	1.29	5000 lb / 2270 kg

Domestic transport regulations (Canada)

TDG

UN-No	UN1170
Proper Shipping Name	ETHANOL more than 24 per cent 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 solution
Hazard Class	3
Packing Group	II

IATA

UN-No	UN1170
Proper Shipping Name	Ethanol solution
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
Methyl alcohol	Yes	Yes	No	Yes 200-659-6	No	Yes	Yes 2-201	Yes	Yes	Yes KE-23193	Yes
Methylisobutyl ketone	Yes	Yes	No	Yes 203-550-1	No	Yes	Yes 2-542	Yes	Yes	Yes KE-24725	Yes
Ethyl acetate	Yes	Yes	No	Yes 205-500-4	No	Yes	Yes 2-726	Yes	Yes	Yes KE-00047	Yes
Naphtha, petroleum, hydrotreated light	Yes	Yes	No	Yes Present	No	Yes	Yes Present	Yes	Yes	Yes Present	Yes

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 contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 CFR 372.

Chemical Name	CAS-No	Volume %	SARA 313 - Threshold limits
Methyl alcohol	67-56-1	3.61	1.0% de minimis concentration
Methylisobutyl ketone	108-10-1	1.87	1.0% de minimis concentration

CERCLA/SARA 103-302

Sections 103-302 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 CFR 103-302. In order to comply with EPCRA 304, Hazardous Substances and their Reportable Quantities, spills or discharges into the environment of a hazardous substance in a quantity equal to or exceeding the RQ within any 24-hour period, must immediately be reported to the National Response Center (Phone: 800-424-8802).

Chemical Name	CAS-No	Volume %	RQ	TPQ
Methyl alcohol	67-56-1	3.61	5000 lb / 2270 kg	
Methylisobutyl ketone	108-10-1	1.87	5000lb / 2270kg	
Ethyl acetate	141-78-6	1.29	5000lb / 2270kg	

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	Volume %	HAPS
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Methyl alcohol	67-56-1	3.61	Present
Methylisobutyl ketone	108-10-1	1.87	Present

State Regulations

California Proposition 65

This product is known to contain chemicals listed under Proposition 65.

Chemical Name	CAS-No	Volume %	Category
Ethyl alcohol	64-17-5	85.4	Developmental
Methyl alcohol	67-56-1	3.61	Developmental
Methylisobutyl ketone	108-10-1	1.87	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	Volume %	Massachusetts	Minnesota	New Jersey	Pennsylvania
Ethyl alcohol	85.4	Yes	Yes	Yes 0844	Yes
Methyl alcohol	3.61	Yes	Yes	Yes 1222	Yes Environmental hazard
Methylisobutyl ketone	1.87	Yes	Yes	Yes 1268	Yes Environmental hazard
Ethyl acetate	1.29	Yes	Yes	Yes 0841	Yes Environmental hazard
Naphtha, petroleum, hydrotreated light	0.8	No	No	No	No
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. D2A - Materials causing other toxic effects, very toxic material. D1B - Materials causing immediate and serious toxic effects, toxic material.

WHMIS Ingredient Disclosure List IDL

Component Information

Chemical Name	Volume %	WHMIS IDL	WHMIS Threshold limits
Ethyl alcohol	85.4	Listed	0.1%
Methyl alcohol	3.61	Listed	0.1%
Methylisobutyl ketone	1.87	Listed	1%
Ethyl acetate	1.29	Listed	1%

(NPRI) Canadian National Pollutant Release Inventory

Component Information

Chemical Name	Volume %	NPRI
Ethyl alcohol	85.4	Part 5, Individual Substances Part 4 Substance
Methyl alcohol	3.61	Part 1, Group A Substance; Part 5, Individual Substances; Part 4 Substance
Methylisobutyl ketone	1.87	Part 1, Group A Substance Part 5, Individual Substances Part 4 Substance
Ethyl acetate	1.29	Part 5, Individual Substances Part 4 Substance
Acetaldehyde	TRACE (0.002)	Part 1, Group A 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: 22-Feb-2010
Revision Date: 13-Feb-2014
Revision Number: 4
Reason for revision: New SDS format. This version replaces all previous versions.

Abbreviations and acronyms

ACGIH TLV - American Conference of Governmental Industrial Hygienists Threshold Limit Values
 AICS - Australian Inventory of Chemical Substances (Australia)
 A3 - Animal Carcinogen
 CAS - Chemical Abstract Service
 CHINA - Chinese Inventory of Existing Chemical Substances (China)
 DOT - U.S. Department of Transportation
 DSL - Domestic Substance List (Canada)
 EC50 - Half maximal effective concentration
 EINECS - European Inventory of Existing Commercial Chemical Substances (EU)
 ELINCS - European List of Notified Chemical Substances (EU)
 ENCS - Existing and New Chemical Substances (Japan) / ISHL - Industrial Health and Safety Law (Japan)
 GHS - Globally Harmonized System of Classification and Labelling of Chemicals
 Group 1 - Carcinogenic to Humans
 IATA - International Air Transport Association Dangerous Goods Regulations
 IARC - International Agency for Research on Cancer
 ICAO - International Civil Aviation Organisation
 ICL - In Commerce List (Canada)
 IMDG - International Maritime Dangerous Goods Code
 IMO - International Maritime Organization
 KECL - Korean Existing and Evaluated Chemical Substances (Korea)
 LC50 - Lethal concentration that produces fatalities in 50% of a given test population
 LD50 - Median lethal dose of a given test population
 MEX - NOM-002-SCT/2003 List of Hazardous Substances and Materials Most Commonly Transported
 MEXICO - Mexico Occupational Exposure Limits
 NDSL - Non Domestic Substances List (Canada)
 NFPA - National Fire Protection Association
 NIOSH - National Institute of Occupational Safety and Health
 NOAEL - No Observed Adverse Effect Level
 NTP - National Toxicology Program
 NZIoC - New Zealand Inventory of Chemicals (New Zealand)
 OECD - Organisation for Economic Co-operation and Development
 OSHA - Occupational Safety & Health Administration
 OSHA PEL - Occupational Safety and Health Administration Permissible Exposure Limits
 PICCS - Inventory of Chemicals and Chemical Substances (Philippines)
 PNEC - Predicted No-Effect Concentration
 Present - Carcinogen or potential carcinogen to be identified under OSHA's Hazard Communication Standard
 STOT - Specific Target Organ Toxicity
 TDG - Transportation of Dangerous Goods (Transport Canada)
 TSCA - Toxic Substances Control Act, Section 8(b) Inventory (USA)
 TWA - Time Weighted Average: Average concentration that should not be exceeded during a work day (usually 8-hours)
 vPvB - Very Persistent and Very Bioaccumulative
 WHMIS - Workplace Hazardous Materials Information System

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.

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