

MATERIAL SAFETY DATA SHEET

ALSAN CLEANER

WHMIS	PROTECTIVE CLOTHING	TRANSPORT OF DANGEROUS GOODS
		 <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <p>Ethyl Acetate Class 3 UN1173 P.G.: II</p> </div>

SECTION I. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name:	Alsan Cleaner
Use:	Used to clean and reactivate the transition area of in-place Soprema Alsan liquid applied one-component polyurethane membranes at tie-ins, repairs and between staged coats of resins. Soprema Alsan Cleaner may also be used as solvent for cleaning spills, tools and equipment.
Code of MSDS:	CA U DRU SS FS 109
Formula number :	Not available
Revision date:	May 9, 2007
Revised by:	Marie-Claude Fontaine, Health and Safety Supervisor (800) 567-1492 mcfontaine@soprema.ca
Distributor:	Soprema USA 310 Quadral Drive Wadsworth (Ohio) 44281 UNITED STATES Tel.: (800) 356-3521
In case of emergency:	
SOPREMA (8:00am to 5:00pm – Eastern time):	(800) 567-1492
CANUTEC (Canada) (24h.):	(613) 996-6666
CHEMTREC (USA) (24h.):	(800) 424-9300
Poison Control Centre:	Consult local telephone directory

EMERGENCY OVERVIEW!!!

Clear, colourless liquid with a fruity odour. **FLAMMABLE LIQUID AND VAPOUR**. Vapour is heavier than air and may spread long distances. Distant ignition and flashback are possible. Mild central nervous system depressant. High vapour concentrations may cause headache, nausea, dizziness, incoordination and confusion.

SECTION II. COMPOSITION AND INFORMATION ON DANGEROUS INGREDIENTS

NAME	CAS #	% WEIGHT *	EXPOSURE LIMIT (ACGIH)	
			TLV-TWA	TLV-STEL
Ethyl Acetate	141-78-6	100	400 ppm	Not available

SECTION III. POTENTIAL HEALTH EFFECTS*Effects of Short-Term (Acute) Exposure***INHALATION:**

Exposure to 400 ppm for 3 to 5 minutes caused irritation to the nose and throat in humans. Symptoms such as tension, tiredness, complaints and annoyance have also been reported during 4 or 8 hour exposures to 400 ppm. Severe exposures may produce signs of central nervous system depression such as shortness of breath, headache, drowsiness and dizziness. One fatal poisoning has been reported, as a result of painting the interior of a truck with a lacquer containing 80% ethyl acetate. Congestion of the upper respiratory tract, spleen and kidney and haemorrhaging in lung tissue were observed. (1)

SKIN CONTACT:

Ethyl acetate was not irritating to the skin in tests using human volunteers and animals. (1)

EYE CONTACT:

The liquid is a mild eye irritant, based on animal information. The vapour has produced eye irritation in humans at 400 ppm. (1)

INGESTION:

Animal toxicity values indicate that ethyl acetate is not very toxic by ingestion. Ingested ethyl acetate may cause nausea, vomiting, shortness of breath, headache, drowsiness, dizziness and other signs of central nervous system depression. These effects may be caused in part by ethanol which is released when ethyl acetate is broken down in the body. Ingestion is not a typical route of occupational exposure. (1)

Effects of Long-Term (Chronic) Exposure

Workers exposed regularly to 375 to 1500 ppm for several months experienced no adverse effects. (1)

The substance is toxic to mucous membranes, upper respiratory tract. The substance may be toxic to blood, kidneys, liver, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage. (2)

SKIN CONTACT:

Prolonged or repeated contact may cause redness, dryness, cracking (dermatitis) due to the defatting action of the solvent. (1)

SKIN SENSITIZATION:

The majority of human studies have demonstrated that ethyl acetate does not cause an allergic response on human skin. However, there is one case report of a woman developing a skin allergy to ethyl acetate. (1)

EYE CONTACT:

Thirty workers exposed chronically to very high concentrations of ethyl acetate (4200 to 13900 ppm) and amyl acetate experienced only mild eye irritation. (1)

CARCINOGENICITY:

No human or animal information available. Probably not carcinogenic. Metabolites of ethyl acetate, ethanol and acetic acid, have not been shown to be carcinogenic. The International Agency for Research on Cancer (IARC) has not evaluated the carcinogenicity of this chemical. The American Conference of Governmental Industrial Hygienists (ACGIH) has not assigned a carcinogenicity designation to this chemical. The US National Toxicology Program (NTP) has not listed this chemical in its report on carcinogens. (1)

TERATOGENICITY AND EMBRYOTOXICITY:

No human or animal information available. (1)

MUTAGENICITY:

No human in vivo information available. Ethyl acetate was not mutagenic in an in vivo study with Chinese hamsters. (1)

TOXICOLOGICALLY SYNERGISTIC MATERIALS:

In one study, the combination of ethyl acetate and formaldehyde was more acutely toxic to rats than predicted from the toxicities of the individual chemicals. (1)

POTENTIAL FOR ACCUMULATION:

Does not accumulate. Ethyl acetate is readily absorbed through the lungs and gastrointestinal tract, distributed to the blood, brain and other tissues, and rapidly metabolized (broken down) to ethanol and acetic acid, which are metabolized further. Ethanol is found in the blood and the expired air after exposure to ethyl acetate. In a study with human volunteers, unchanged ethyl acetate was totally excreted in the urine within 2 hours after exposure was stopped. (1)

SECTION IV. FIRST AID MEASURES**SKIN CONTACT:**

Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops. Cold water may be used.

EYE CONTACT:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

SECTION IV. FIRST AID MEASURES

INHALATION:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms appear.

Serious inhalation: Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

INGESTION:

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

SECTION V. FIRE-FIGHTING MEASURES

FLAMMABILITY: Flammable.

FLASH POINT: CLOSED CUP: -4.4°C (24.1°F). (TAG) OPEN CUP: 7.2°C (45°F) (Cleveland).
≤ - 37°C (pentane)

AUTO-IGNITION TEMPERATURE: 426.67°C (800°F)

FLAMMABILITY LIMITS IN AIR: (% in volume) LOWER: 2.2% UPPER: 9%

COMBUSTION PRODUCTS:

These products are carbon oxides (CO, CO₂).

FIRE HAZARDS IN PRESENCE OF VARIOUS SUBSTANCES:

Highly flammable in presence of open flames and sparks, of heat. Slightly flammable to flammable in presence of oxidizing materials, of acids, of alkalis. Non-flammable in presence of shocks.

EXPLOSION HAZARDS IN PRESENCE OF VARIOUS SUBSTANCES:

Risks of explosion of the product in presence of static discharge: Not available.

Slight explosive in presence of heat. Non-explosive in presence of shocks.

FIRE FIGHTING MEDIA AND INSTRUCTIONS:

Flammable liquid, soluble or dispersed in water.

SMALL FIRE: Use DRY chemical powder.

LARGE FIRE: Use alcohol foam, water spray or fog.

SPECIAL REMARKS ON FIRE HAZARDS:

Vapour may travel considerable distance to source of ignition and flash back. When heated to decomposition it emits acrid smoke and irritating fumes.

SPECIAL REMARKS ON EXPLOSION HAZARDS:

The liquid produces a vapour that forms explosive mixtures with air at normal temperatures. Explosive reaction with lithium tetrahydroaluminate.

SECTION VI. ACCIDENTAL RELEASE MEASURES

SMALL SPILL:

Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

LARGE SPILL:

Flammable liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

SECTION VII. HANDLING AND STORAGE

PRECAUTIONS:

Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes vapour/spray. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, acids, alkalis.

STORAGE:

Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame). Moisture sensitive.

SECTION VIII. EXPOSURE CONTROLS / PERSONAL PROTECTION

RESPIRATORY:

If respiratory tract irritations occurs or if any dust exposure limit is exceeded, use a respirator such as 3M Model 8271 or Model 8210, or equivalent for protection against nuisance dusts. When normal ventilation is provided to work area, no respiratory protection is needed for pentane vapour.

PERSONAL PROTECTION:

Safety glasses. Lab coat. Vapour respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

SECTION VIII. EXPOSURE CONTROLS / PERSONAL PROTECTION**PERSONAL PROTECTION IN CASE OF LARGE SPILL:**

Splash goggles. Full suit. Vapour respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

ENGINEERING CONTROLS:

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

SECTION IX. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid.
APPEARANCE:	Colourless liquid.
ODOUR:	Ethereal. Fruity. (Slight.)
ODOUR THRESHOLD:	3.9 ppm
TASTE:	Bittersweet, wine-like burning taste.
VAPOUR DENSITY (air = 1):	3.04
VAPOUR PRESSURE:	12.4 kPa (@ 20°C)
EVAPORATION RATE (Butyl acetate = 1):	Not applicable
BOILING POINT:	77°C (170.6°F)
MELTING POINT:	-83°C (-117.4°F)
CRITICAL TEMPERATURE:	250°C (482°F)
SPECIFIC GRAVITY (H₂O = 1):	0.902
SOLUBILITY:	Soluble in cold water, hot water, diethyl ether, acetone, alcohol, benzene
VOLATILITY:	Not available.
pH (1% soln/water):	Not available.
MOLECULAR WEIGHT:	88.11 g/mole.
WATER/OIL DIST. COEFFICIENT:	The product is more soluble in oil; log (oil/water) = 0.7.
IONICITY (in Water):	Not available.

SECTION X. STABILITY AND REACTIVITY

STABILITY:	The product is stable.
INSTABILITY TEMPERATURE:	Not available.
CONDITIONS OF INSTABILITY:	Heat, ignition sources (flames, sparks, static), incompatible materials.
INCOMPATIBILITY:	Reactive with oxidizing agents, acids, alkalis.
CORROSIVITY:	Non-corrosive in presence of glass.
SPECIAL REMARKS ON REACTIVITY:	Also incompatible with nitrates, chlorosulfonic acid, oleum, potassium-tert-butoxide, and lithium tetrahydroaluminate. Moisture sensitive. On storage, it is slowly decomposed by water.
SPECIAL REMARKS ON CORROSIVITY:	Not available.
POLYMERIZATION:	Will not occur.

SECTION XI. TOXICOLOGICAL INFORMATION**TOXICOLOGICAL DATA:**

<i>Ethyl Acetate (1):</i> LC50 (rat):	19600 ppm (4-hour exposure); cited as 16000 ppm (6-hour exposure)
LC50 (mouse):	10600 ppm (38100 mg/m ³) (4-hour exposure); cited as 44000 mg/m ³ (3-hour exposure)
LD50 (oral, rat):	10200 mg/kg (cited as 11.3 mL/kg); 5600 mg/kg
LD50 (oral, mouse):	4100 mg/kg (unconfirmed)
LD50 (oral, rabbit):	4900 mg/kg
LD50 (oral, guinea pig):	5500 mg/kg (unconfirmed)
LD50 (dermal, rabbit):	Greater than 18000 mg/kg (cited as 20mL/kg)

SECTION XI. TOXICOLOGICAL INFORMATION**EYE IRRITATION:**

Ethyl acetate is a mild eye irritant. Application of 0.1 ml of undiluted ethyl acetate produced mild irritation (Modified Maximum Average Score: 15/110). Application of 0.5 ml undiluted ethyl acetate caused mild irritation in rabbits (scored 1-5, where 5 is severe injury; graded 2/10). One drop caused redness and moderate swelling in rabbit eyes lasting for 1 to 2 days. The irritation was of similar intensity to 2% acetic acid. Application of 2 drops followed by irrigation with water 2 minutes later caused immediate irregularity of the outer layer of the cornea. Complete healing occurred within 2 days. Extremely high concentrations of vapour or prolonged exposure to vapour caused only irritation or mild eye injury. (1)

SKIN IRRITATION:

Ethyl acetate is a minimal skin irritant. Application of 0.01 ml produced minimal irritation in rabbits after 24 hours. (1)

*Effects of Short-Term (Acute) Exposure***SKIN:**

May cause skin irritation. (2)

EYES:

Causes eye irritation. May cause irritation of the conjunctiva. (2)

INHALATION:

Cats exposed to 8000 ppm for 20 minutes developed irritation only. With increasing levels of exposure, effects increased and included breathing difficulty, unconsciousness and at 43000 ppm, death after 15 minutes. Mice exposed to 2000 ppm vapour for 17 hours developed eye and nose irritation and breathing difficulty. A 3-4 hour exposure to 5000 ppm caused clouding of the cornea and stupor, followed by recovery. Exposure to 10000 ppm or greater for 45 minutes caused clouding of the cornea, stupor and death in some animals. All 6 rats died following a 4-hour exposure at 16000 ppm. All 6 rats had survived a 4-hour exposure at 8000 ppm. The concentration causing a 50% decrease in the respiratory rate of mice has been reported to be 580 and 614 ppm, based on two studies. This concentration is expected to be intolerable to humans. (1)

May cause respiratory tract and mucous membrane irritation. May affect respiration and may cause acute pulmonary oedema. May affect gastrointestinal tract (nausea, vomiting). May affect behaviour/central nervous system (mild central nervous system depression – exhilaration, talkativeness, boastfulness, belligerency, vertigo, diplopia, drowsiness, slurred speech, slowed reaction time, dizziness, lightheadedness, somnolence, ataxia, unconsciousness, irritability, fatigue, sleep disturbances, reduced memory and concentration, stupor, coma), cardiovascular system (peripheral vascular collapse (shock) – rapid pulse, hypotension, cold pale skin, hypothermia). Other symptoms may include: flushing of face and sweating. (2)

INGESTION:

May cause gastrointestinal tract irritation with nausea and vomiting. May affect blood, behaviour/central nervous system (CNS depression – effects may be similar to that of inhalation). (2)

*Effects of Long-Term (Chronic) Exposure***SKIN:**

Repeated or prolonged skin contact may cause drying and cracking of the skin. (2)

INGESTION:

Prolonged or repeated ingestion may affect the liver. (2)

INHALATION:

Animals exposed to 4300 ppm (mice) and 2000 ppm (guinea pig), 6 hours/day for 7 days developed minor blood changes and loss of appetite. There was no indication of liver or kidney injury. Rabbits exposed to 16000 mg/m³ (4440 ppm), 1 hour/day for 40 days developed secondary anaemia (decreased number of red blood cells), decreased hemoglobin levels, increased numbers of macrophages, congestion and fatty degeneration of various organs, and enlargement of the spleen. A reviewer suggested that the organ damage may have been due to impurities present in the ethyl acetate. (1)

Prolonged inhalation may affect behaviour/central nervous system (symptoms similar to those of acute inhalation), and cause liver, kidney, lung, and heart damage. It may also affect metabolism, and blood (anaemia, leukocytosis). (2)

MUTAGENICITY:

Negative results were obtained in bone marrow cells from Chinese hamsters exposed orally to 2500 mg/kg. Negative results were obtained in bacteria in an Ames test. Ethyl acetate produced aneuploidy in one study on yeast and chromosomal aberrations in Chinese hamster cells in vitro. (1)

CARCINOGENICITY:

A4 (Not classifiable for human or animal.) by ACGIH. Causes damage to the following organs: mucous membranes, upper respiratory tract. May cause damage to the following organs: blood, kidneys, liver, central nervous system (CNS).

SECTION XII. ECOLOGICAL INFORMATION**ECOTOXICITY:**

Ecotoxicity in water (LC50): 220 mg/l 96 hours [Fish (Fathead minnow)]. 212.5 ppm 96 hours [Fish (Indian catfish)].

BOD5 and COD:

Not available.

PRODUCTS OF BIODEGRADATION:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

TOXICITY OF THE PRODUCTS OF BIODEGRADATION:

The product itself and its products of degradation are not toxic.

SECTION XII. ECOLOGICAL INFORMATION

SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION:

Not available.

SECTION XIII. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

SECTION XIV. TRANSPORT INFORMATION

NAME OF PRODUCT:	Alsan Cleaner	IDENTIFICATION NUMBER:	UN 1173
CLASSIFICATION (TDG - DOT):	Class 3	SHIPPING NAME:	Flammable liquid
CONTAINERS FOLLOW THE STANDARDS OF:		PACKING GROUP:	II
Canada:	CAN / CGSB-43.150-97		
USA:	CFR 49 parts 100 to 199		

SECTION XV. REGULATORY INFORMATION

WHMIS (Canada): Class B2: Flammable liquid (flash point below 37.8°C [100°F])

Federal and State Regulations:

- Connecticut hazardous material survey: Ethyl acetate
- Illinois toxic substances disclosure to employee act : Ethyl acetate
- Illinois chemical safety act: Ethyl acetate
- New York release reporting list: Ethyl acetate
- Rhode Island RTK hazardous substances: Ethyl acetate
- Pennsylvania RTK: Ethyl acetate
- Florida: Ethyl acetate
- Minnesota: Ethyl acetate
- Massachusetts RTK: Ethyl acetate
- Massachusetts spill list: Ethyl acetate
- New Jersey: Ethyl acetate
- New Jersey spill list: Ethyl acetate
- Louisiana spill reporting: Ethyl acetate
- California Director's list of Hazardous Substances: Ethyl acetate
- TSCA 8(b) inventory: Ethyl acetate
- TSCA 4(a) final test rules: Ethyl acetate
- TSCA 8(a) IUR: Ethyl acetate
- TSCA 12(b) annual export notification: Ethyl acetate
- CERCLA: Hazardous substances: Ethyl acetate: 5000 lbs (2268 kg)

Other Regulations:

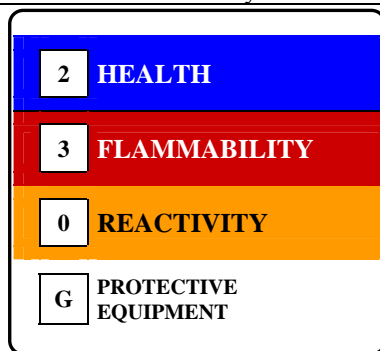
- OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).
- EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

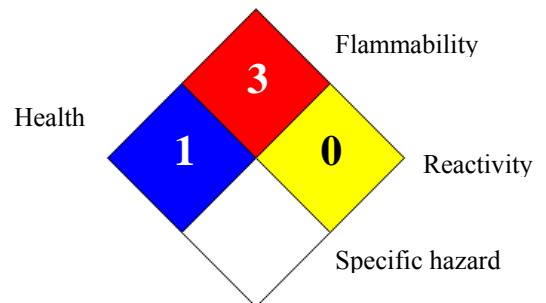
DSCL (EEC):

- R11 – Highly flammable.
- R36 – Irritating to eyes.
- S2 – Keep out of the reach of children.
- S16 – Keep away from sources of ignition – No smoking.
- S26 – In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S33 – Take precautionary measures against static discharges.
- S46 – If swallowed, seek medical advice immediately and show this container or label.

HMIS (USA):



NFPA (USA):



SECTION XVI. OTHER INFORMATION

Glossary:

ACGIH:	American Conference of Governmental Industrial Hygienists
ANSI:	American National Standards Institute
CAS:	Chemical Abstract Services
CFR:	Code of Federal Regulations (United States)
DOT:	Department of Transportation
DSL:	Domestic Substances List (Canada)
EPA:	Environmental Protection Agency
HMS:	Hazardous Material Information System
IARC:	International Agency for Research on Cancer
LC50:	(Lethal concentration ₅₀) Concentration of a substance in air that causes death of 50% mortality of a defined animal population.
LD50:	(Lethal dose ₅₀) Single dose of a substance that, when administered by a defined route in an animal assay, is expected to cause the death of 50% of a defined animal population.
NIOSH:	National Institute for Occupational Safety and Health
NFPA:	National Fire Protection Association
NTP:	National Toxicology Program
OSHA:	Occupational Safety & Health Administration
RCRA:	Resource Conservation and Recovery Act
SARA:	Superfund Amendments and Reorganization Act
TDG:	Transportation Dangerous Goods
TLV:	Threshold Limit Value
TWA:	Time-weighted average
TSCA:	Toxic Substances Control Act
WHMIS:	Workplace Hazardous Materials Information System

Reference:

- (1) CHEMINFO (2006) Canadian Centre of Organisational Health and Safety, Hamilton (Ontario) Canada
- (2) Material Safety Data Sheet of the supplier.

Justification of the update:

- New product.

This MSDS contains all the information required by ANSI Z-400.1-1998 standard (United States), by regulation 29 CFR Part 1910.1200 of the Hazard Communication Standard of OSHA, and is in accordance with standard DORS/88-66 OF WHMIS Canada.

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier or any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.