



MATERIAL SAFETY DATA SHEET

A.W.T. WORLD TRADE, INC.

PRODUCT:
LIQUID SEAL

04/12/2005

Section 1 - Chemical Product / Company Information

Product Name: Liquid Seal Revision Date: 04/12/2005
Identification Number: LS-535 Supercedes : 04/12/2005
Supplier: A.W.T. World Trade, Inc.
4321 N. Knox Ave.
Chicago, Illinois 60641
(773) 777-7100

Emergency Telephone Number:

Chem-Tel 800-255-3924

Section 2 - Composition / Information On Ingredients

Chemical Name

CAS Number
Wt % Less Than
ACGIH TLV-TWA
ACGIH TLV-STEL
OSHA PEL-TWA
OSHA PEL-Ceiling

Methylene chloride

85.0

Section 3 - Hazards Identification

*** EMERGENCY OVERVIEW ***: Causes skin burns. Suspect cancer hazard - Risk of cancer depends on duration and level of exposure.

Effects Of Overexposure - Eye Contact: Moderately irritating to the eyes causing transient corneal injury.

Effects Of Overexposure - Skin Contact: Causes skin burns. May cause severe irritation. Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash).

Effects Of Overexposure - Inhalation: Easily absorbed through lungs. Excessive exposure may cause carboxyhemoglobinemia, therefore impairing the blood's ability to transport oxygen. Prolonged exposure to high concentrations can cause central neurological depression and EEG abnormalities. Prolonged inhalation may be harmful.

Effects Of Overexposure - Ingestion: Slightly toxic. Harmful or fatal if liquid is aspirated into lungs. Repeated ingestion may lead to gastrointestinal disturbances. Cause (target organ or system) damage. (e.g., lung, nervous system, blood disorders,



liver, kidney, immune system, cardiovascular system, thyroid, testicular, ovarian, etc.).

Effects Of Overexposure - Chronic Hazards: Possible reproductive hazard. Suspect cancer hazard - Risk of cancer depends on duration and level of exposure.

Primary Route(s) Of Entry: Skin Contact, Inhalation, Ingestion, Eye Contact

Section 4 - First Aid Measures

First Aid - Eye Contact: Flush eyes with water a minimum of 15 minutes occasionally lifting lower and upper lids. Get medical attention promptly.

First Aid - Skin Contact: Wash with soap and water. Get medical attention if irritation develops or persists.

First Aid - Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.

First Aid - Ingestion: Do not induce vomiting. Do not give liquids. Obtain emergency medical attention.

Section 5 - Fire Fighting Measures

Flash Point, F: N/A (does not flash by standard methods) Lower Explosive Limit, %: N.D.

(TCC) Upper Explosive Limit, %: N.D.

Extinguishing Media: Carbon Dioxide, Dry Chemical, Foam, Water Fog

Unusual Fire And Explosion Hazards: Empty containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. Also, do not reuse container without commercial cleaning or reconditioning.

Special Firefighting Procedures: Water spray to cool containers or protect personnel. Use with caution.

Section 6 – Accidental Release Measures

Steps To Be Taken If Material Is Released Or Spilled: Do not touch or walk through spilled material. Stay upwind of spill. Ventilate spill area. Avoid runoff into storm sewers and ditches which lead to waterways. Wear a self-contained breathing apparatus and appropriate personal protective equipment. (See Exposure Controls/Personal Protection Section) Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container.

Section 7 - Handling And Storage

Handling: Avoid contact with eyes, skin, and clothing. Use only in a well ventilated area.

Storage: Protect from direct sunlight. Containers can build up pressure if exposed to heat (fire). Store containers in a cool, well ventilated place. Keep away from heat, sparks, and flame. Keep container closed when not in use.

Section 8 - Exposure Controls / Personal Protection



Engineering Controls: Good general ventilation should be sufficient to control airborne levels.

Respiratory Protection: NIOSH/MSHA approved respirators may be necessary if airborne concentrations are expected to exceed exposure limits.

Skin Protection: Wear protective gear as needed - apron, suit, boots. Wear impervious gloves to prevent contact with the skin.

Eye Protection: Wear safety glasses with side shields (or goggles) and a face shield.

Other protective equipment: No Information.

Hygienic Practices: Do not eat, drink, or smoke in areas where this material is used. Wash hands before eating. Wash thoroughly after handling.

Section 9 - Physical And Chemical Properties

Boiling Range:	N.D. - N.D.	Vapor Density:	N.D.
Odor:	Typical	pH:	N.D.
Appearance:	Clear, red liquid	Evaporation Rate:	<1 (n-butyl acetate=1)
Solubility in H ₂ O:	Partial	Viscosity:	N.D.
Freeze Point:	N.D.	Specific Gravity:	1.3175
Vapor Pressure:	N.D.		
Physical State:	Liquid		

(See section 16 for abbreviation legend)

Section 10 - Stability And Reactivity

Conditions To Avoid: No Information.

Incompatibility: Keep away from strong bases. Prevent contact with strong oxidizing agents. May be corrosive to aluminum, magnesium, titanium, and their alloys. May be corrosive to iron, stainless steel, copper, and nickel in the presence of air and water, and especially at elevated temperatures. May react violently with alkali and alkaline earth metals such as sodium, potassium and barium.

Hazardous Decomposition: During combustion carbon dioxide may be formed. During combustion carbon monoxide may be formed. May release hydrogen chloride under fire conditions. Toxic gases/fumes are given off during burning or thermal decomposition.

Hazardous Polymerization: N.D.

Stability: N.D.

Section 11 - Toxicological Information



Product LD50: N.D.

Product LC50: N.D.

Chemical Name

LD50 mg/kg

LC50 mg/L

Methylene chloride
3250.0
50.0

Section 12 - Ecological Information

Ecological Information: N.D.

Section 13 - Disposal Information

Disposal Information: Dispose of waste in accordance with all local, state and federal regulations.

Section 14 - Transportation Information

DOT Proper Shipping Name: Dichloromethane solutions
Packing Group: III
DOT Hazard Class: 6.1
DOT UN/NA Number: UN1593
Hazard Subclass: Use Carcinogenic Label
ERG #: 160

The listed Transportation Information applies only to ground transport and does not address regulatory variations due to changes in package size, mode of shipment, or other regulatory descriptors.

Section 15 - Regulatory Information

CERCLA – SARA Hazard Category

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:



IMMEDIATE HEALTH HAZARD, CHRONIC HEALTH HAZARD

SARA Section 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR Part 372:

Chemical Name

CAS Number

Methylene chloride
75-09-2

Toxic Substances Control Act:

All components of this product are listed or are exempt from listing on the TSCA 8(b) inventory. If identified components of this product are listed under the TSCA 12(b) export notification rule, they will be listed below:

U.S. State Regulations: As follows –

New Jersey Right-to-Know:

The following materials are non-hazardous, but are among the top five components in this product.

Chemical Name

CAS Number

Polyester polymer

Dye

Pennsylvania Right-to-Know:

The following non-hazardous ingredients are present in the product at greater than 3%.

Chemical Name

CAS Number

Polyester polymer

California Proposition 65:

Warning: The following ingredients present in the product are known to the state of California to cause Cancer:

Chemical Name

CAS Number

Methylene chloride

75-09-2

Warning: The following ingredients present in the product are known to the state of California to cause birth defects or other reproductive hazards.

Chemical Name

CAS Number

Methylene chloride

75-09-2



International Regulations:

CANADIAN WHMIS:

This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

Section 16 - Other Information

HMIS Ratings:

Health: 2

Flammability: 1

Reactivity: 0

Personal Protection: X

VOLATILE ORGANIC COMPOUNDS, g/L: 1090

REASON FOR REVISION:

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

The information on this MSDS was obtained from sources which we believe to be reliable. However, the information is provided without any warranty, expressed or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the product itself. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For these reasons, we do not assume responsibility and expressly disclaim any liability for loss, damage, or expense arising out of or in any way connected with handling, storage, use, or disposal of this product. If the product is used as a component in another product, this MSDS may not be applicable. It is the responsibility of the user to comply with all Federal, State, and Local laws and regulations.



MATERIAL SAFETY DATA SHEET

A.W.T. WORLD TRADE, INC.

1. PRODUCT AND COMPANY IDENTIFICATION

Product Code: LSC536 Catalyst

Revision date: 08/26/2004

Company Identification: A.W.T. World Trade, Inc.
4321 N. Knox Avenue
Chicago, IL 60641-1906 U.S.A.

Emergency telephone number

Chem-Tel 800-255-3924

2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Polymeric isocyanate	Not Required	74.0 - 76.0 %
Toluene diisocyanate	26471-62-5	< 0.5 %
Ethyl acetate	141-78-6	24.0 - 26.0 %

3. HAZARDS IDENTIFICATION

Emergency Overview

Appearance

Form liquid
clear
Colour yellow
Odour solvent



Hazard Summary

Flammable.
The product causes irritation of eyes, skin and mucous membranes.
severe irritation of the mouth, throat, and digestive tract
May cause sensitization by inhalation and skin contact.
shortness of breath
Bronchial constriction may develop after extensive exposure to isocyanates, even in individuals who have not been shown to be previously sensitized.
Causes liver and kidney effects.
central nervous system (CNS) effects

Potential Health Effects

Primary Routes of Entry: Inhalation
Skin contact
Eye contact

Eyes: The solvent(s) in this material can cause the following:
irritation
conjunctivitis
pain
temporary corneal injury
tearing

Skin: Material can cause the following:
Moderate irritation.
reddening
- skin sensitization even at low concentrations in susceptible individuals
Prolonged or repeated overexposure to the solvent(s) in this material can cause the following:
defatting and drying of the skin which can lead to irritation and dermatitis

Ingestion: Material can cause the following:
severe irritation of the mouth, throat, and digestive tract
nausea
narcosis
headache

Inhalation: Inhalation of solvent vapor or mist can cause the following:
irritation of nose, throat, and lungs
headache
nausea
vomiting
central nervous system (CNS) effects
- respiratory sensitization (isocyanates)
tightness in the chest
shortness of breath
lung damage

Chronic Exposure: Prolonged overexposure to ethyl acetate can cause the following: - kidney damage - liver damage - heart damage - lung damage - blood effects - nervous system effects
Long term exposure to diisocyanates may cause lung damage, including reduced lung function, which may be



permanent.

Toluene diisocyanate	US CA CRT	Carcinogenic.
Toluene diisocyanate	NTP CARC	Anticipated carcinogen.
Toluene diisocyanate	IARC	Possible carcinogen.

4. FIRST AID MEASURES

Inhalation: Move to fresh air. Give artificial respiration if breathing has stopped. Get prompt medical attention. In case of shortness of breath, give oxygen.

Skin contact: Remove contaminated clothing. Wash off with soap and plenty of water. Wash contaminated clothing before re-use. Do not take clothing home to be laundered. Consult a physician.

Eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Ingestion: Drink 1 or 2 glasses of water. Consult a physician. If vomiting occurs spontaneously, keep airway clear. Never give anything by mouth to an unconscious person.

Notes to physician

Bronchial constriction may develop after extensive exposure to isocyanates, even in individuals who have not been shown to be previously sensitized. MATERIAL IS SEVERELY IRRITATING. It may not be advisable to induce vomiting. Possible mucosal damage may contraindicate the use of gastric lavage.

5. FIRE-FIGHTING MEASURES

Flash point	1 °C (33.8 °F) DIN 53213
Ignition temperature	485.0 °C (905 °F) Ethyl acetate
Lower explosion limit	2.2 %(V)Ethyl acetate
Upper explosion limit	11.5 %(V)Ethyl acetate

Suitable extinguishing media: Use the following extinguishing media when fighting fires involving this material:
carbon dioxide (CO2)
dry powder
foam
Water in very large quantities.

Specific hazards during fire fighting: Vapors can travel to a source of ignition and flash back. Heated material can form flammable or explosive vapors with air. Closed containers may rupture via pressure build-up when exposed to fire or extreme heat. During a fire, irritating and highly toxic gases and/or fumes may be generated during combustion or decomposition. DO NOT permit water to enter containers. Closed containers may explode when heated or contents contaminated with water.

Special protective equipment for fire-fighters: In the event of fire, wear self-contained breathing apparatus.

Further information: EXPLOSION HAZARD. Fight advanced fires from a protected location.
Cool closed containers exposed to fire with water spray.
DO NOT permit water to enter containers.
Remain upwind.
Avoid breathing smoke.
Contain run-off.



6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Appropriate protective equipment must be worn when handling a spill of this material. See SECTION 8, Exposure Controls/Personal Protection, for recommendations.

MATERIAL IS A POTENTIAL SENSITIZER.

If exposed to material during clean-up operations, IMMEDIATELY remove all contaminated clothing and wash exposed skin areas with soap and water. See SECTION 4, First Aid Measures, for further information.

Wash contaminated clothing before re-use.

Do not take clothing home to be laundered.

Environmental precautions

WARNING: KEEP SPILLS AND CLEANING RUNOFFS OUT OF MUNICIPAL SEWERS AND OPEN BODIES OF WATER.

Methods for cleaning up

Eliminate all ignition sources.

Evacuate personnel to safe areas.

Ventilate the area.

Floor may be slippery; use care to avoid falling.

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

Sweep up or vacuum up spillage and collect in suitable container for disposal.

No sparking tools should be used.

Avoid all contact.

Avoid breathing vapor.

NOTE: Spills on porous surfaces can contaminate groundwater.

7. HANDLING AND STORAGE

Handling

Vapors can be evolved when material is heated during processing operations. See SECTION 8, Exposure Controls/Personal Protection, for types of ventilation required. Use non-sparking tools and grounding cables when transferring. This material is a potential skin sensitizer. See SECTION 8, Exposure Controls/Personal Protection, prior to handling. Wash after handling and shower at end of work period.

Further information on storage conditions: Residual vapors in empty containers may explode on ignition. DO NOT cut, drill, grind or weld on or near container.

Storage

Storage conditions: Avoid temperature extremes during storage; ambient temperature preferred. Store away from excessive heat (e.g. steampipes, radiators), from sources of ignition and from reactive materials. Material can burn; limit indoor storage to approved areas equipped with automatic sprinklers. Store out of direct sunlight in a cool place. Keep containers tightly closed in a cool, well-ventilated place. Avoid all ignition sources. Ground all metal containers during storage and handling. Keep material dry. Moisture may affect product quality.

Further information:

CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all MSDS and label warnings even after container is emptied.

Improper disposal or re-use of this container may be dangerous and illegal. Refer to applicable local, state and federal regulations.



8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limit(s)

Exposure limits are listed below, if they exist.

Component		Type of listing	Value
Toluene diisocyanate	AWT World Trade, Inc.	TWA	0.036 mg/m ³
		STEL	0.14 mg/m ³

Component	Regulation	Type of listing	Value
Ethyl acetate	ACGIH	TWA	1,440 mg/m ³ 400 ppm
	OSHA_TRANS	PEL	1,400 mg/m ³ 400 ppm
	Z1A	TWA	1,400 mg/m ³ 400 ppm
	AWT World Trade, Inc.	TWA	150 ppm
	AWT World Trade, Inc.	STEL	300 ppm

Eye protection: Use chemical splash goggles (ANSI Z87.1 or approved equivalent). Eye protection worn must be compatible with respiratory protection system employed.

Hand protection: Chemical-resistant gloves should be worn whenever this material is handled. The glove(s) listed below may provide protection against permeation. (Gloves of other chemically resistant materials may not provide adequate protection): VITON Synthetic Rubber (registered Trademark of Dupont Dow Elastomers) Polyvinyl alcohol 4H Glove (Trademark of Safety 4 A/S of Denmark) Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. Rinse and remove gloves immediately after use. Wash hands with soap and water.

Skin and body protection: Use chemically resistant apron or other impervious clothing to avoid prolonged or repeated skin contact. Where splashing is possible, full chemically resistant protective clothing (e.g. acid suit) and boots are required.

Respiratory protection: A respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements or equivalent must be followed whenever workplace conditions warrant a respirator's use. None required if airborne concentrations are maintained below the exposure limit listed in Exposure Limit Information. Above the exposure limit: Wear a properly fitted NIOSH approved (or equivalent) self-contained breathing apparatus in the pressure demand mode, OR full-facepiece, airline respirator in the pressure demand mode with emergency escape provision.

Protective measures: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Engineering measures: Use explosion-proof local exhaust ventilation with a minimum capture velocity of 100 ft/min (0.5 m/sec) at the point of vapor evolution. Refer to the current edition of Industrial Ventilation: A Manual of Recommended Practice published by the American Conference of Governmental Industrial Hygienists for information on the design, installation, use, and maintenance of exhaust systems.



9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid
	clear
Colour	yellow
Odour	solvent
pH	not applicable
Boiling point/range	77 °C (171 °F) Ethyl acetate
Melting point/range	No data available
Flash point	1 °C (33.8 °F) DIN 53213
Ignition temperature	485 °C (905 °F) Ethyl acetate
Lower explosion limit	2.2 %(V)Ethyl acetate
Upper explosion limit	11.5 %(V)Ethyl acetate
Vapour pressure	73.0 mmHg at 20 °C (68 °F) Ethyl acetate
Relative vapour density	3.0Ethyl acetate
Water solubility	insoluble
Relative density	1.17 at 20 °C (68 °F)
Viscosity, dynamic	No data available
Evaporation rate	No data available
Percent volatility	24 - 26 %

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Hazardous reactions	This material is considered stable. However, keep away from moisture, heat or flame. However, this material can undergo hazardous polymerization. See Hazardous Polymerization for conditions to avoid.
Materials to avoid	Avoid contact with the following: Strong Oxidizers acids water bases amines
Hazardous decomposition products polymerization	Thermal decomposition may yield the following: hydrogen cyanide (hydrocyanic acid), isocyanate monomers, acetaldehyde, Hazardous polymerization will also occur if contaminated with the following: - water (moisture)

11. TOXICOLOGICAL INFORMATION

No toxicity data are available for this material.

Component: **Ethyl acetate**
Acute oral toxicity LD50 human 6,100 mg/kg

Component: **Ethyl acetate**



Acute oral toxicity LD50 rat 5,620 mg/kg

Component: **Ethyl acetate**

Mutagenicity

No mutagenic activity was observed in bacterial cells.

12. ECOLOGICAL INFORMATION

This product has no known eco-toxicological effects.

Ethyl acetate

Ecotoxicity effects

Toxicity to fish	LC50 Rainbow trout (<i>Oncorhynchus mykiss</i>) 96 h 484 mg/l
Toxicity to fish	LC50 Fathead minnow (<i>Pimephales promelas</i>) 96 h 230 mg/l
Toxicity to algae	EC50 Algae 96 h 2,000 mg/l
Toxicity to aquatic invertebrates	EC50 <i>Daphnia magna</i> 48 h 717 mg/l

13. DISPOSAL CONSIDERATIONS

Environmental precautions: WARNING: KEEP SPILLS AND CLEANING RUNOFFS OUT OF MUNICIPAL SEWERS AND OPEN BODIES OF WATER.

Disposal

Waste Classification: 40 CFR 261.20 - .24 - Characteristic Waste D001, 100 lbs.

When a decision is made to discard this material as supplied, it is classified as a RCRA hazardous waste with the characteristic of ignitability.

For disposal, incinerate this material at a facility that complies with local, state, and federal regulations.

(See 40 CFR 268)

Contaminated packaging: Empty containers should be taken for local recycling or waste disposal.

14. TRANSPORT INFORMATION

DOT

Proper shipping name	Resin solution
UN-No	UN 1866
Class	3
Packing group	II
Reportable Quantity	Ethyl acetate



IMO/IMDG

Proper shipping name	RESIN SOLUTION
UN-No	UN 1866
Class	3
Packing group	II

Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations

15. REGULATORY INFORMATION

Workplace Classification

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

This product is a 'controlled product' under the Canadian Workplace Hazardous Materials Information System (WHMIS).

SARA TITLE III: Section 311/312 Categorizations (40CFR370): Acute Health Hazard

Chronic Health Hazard

Fire Hazard

SARA TITLE III: Section 313 Information (40CFR372)

This product contains a chemical which is listed in Section 313 at or above de minimis concentrations. The following listed chemicals are present: (Quantity present is found elsewhere on this MSDS.)

SARA Title III Components:	Toluene diisocyanate	26471-62-5
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CERCLA Information (40CFR302.4)

This material is regulated under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA) Title III Section 304. This material is or contains chemical(s) listed in 40 CFR Table 302.4 or nondesignated RCRA ICR substance(s). (Nondesignated ICR substances apply to materials that will not be reused.) The Reportable Quantity(s) (RQ) are listed below. Releases in excess of its reportable quantity must be reported to the National Response Center (1-800-424-8802) and to the appropriate state and local emergency response organizations.

CERCLA Components:	Ethyl acetate	141-78-6	5,000 lbs RQ
	Toluene diisocyanate	26471-62-5	100 lbs RQ

US. Toxic Substances Control Act (TSCA) All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

Pennsylvania

Any material listed as "Not Hazardous" in the CAS REG NO. column of SECTION 2, Composition/Information On Ingredients, of this MSDS is a trade secret under the provisions of the Pennsylvania Worker and Community Right-to-Know Act.

California (Proposition 65)

This product contains a component or components known to the state of California to cause cancer:

Components:	m-Tolyldiene diisocyanate	26471-62-5
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16. OTHER INFORMATION

Hazard Rating

	Health	Fire	Reactivity
HMIS	2*	3	1

Legend

ACGIH	American Conference of Governmental Industrial Hygienists
BAC	Butyl acetate
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
STEL	Short Term Exposure Limit (STEL):
TLV	Threshold Limit Value
TWA	Time Weighted Average (TWA):
	Bar denotes a revision from prior MSDS.

The information provided in this Safety Data Sheet 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text.