

# SAFETY DATA SHEET

## TL 4421

Revision Date 8/21/2015

Version: 1.0.0

### SECTION 1: Identification of the substance/ mixture and of the company/ undertaking

Trade name: TL 4421  
Description: Clear liquid adhesive  
Supplier: Mace Polymers & Additives Inc.  
Street: 38 Roberts Road  
P.O. Box: PO Box 1517  
Postal code/city: Dudley, MA 01571  
Country: USA  
Telephone: (508) 943-9052  
Fax: (508) 943-6527  
E-mail (competent person): [egulla@maceco.com](mailto:egulla@maceco.com)  
Emergency telephone number: CHEMTREC (800) 424-9300 (US)

### SECTION 2: Hazards identification

OSHA/HCS status This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).  
Classification of the Substance or mixture: FLAMMABLE LIQUIDS Category 2  
EYE IRRITATION Category 2B  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 3  
(Narcotic effects)

GHS label elements



Hazard pictograms:

Signal word:

DANGER

Hazard statements:

H225 Highly flammable liquid and vapor  
H315 Causes skin irritation  
H319 Causes serious eye irritation  
H333 May be harmful if inhaled  
H336 May cause drowsiness or dizziness  
H361 Suspected of damaging the unborn child  
H373 May cause damage to organs through prolonged or repeated exposure

Precautionary statements:

P201 Obtain special instructions before use  
P202 Do not handle until all safety precautions have been read and understood  
P210 Keep away from heat/ sparks/ open flames/ hot surfaces – NO SMOKING  
P233 Keep container tightly closed  
P240 Ground/ bond container and receiving equipment  
P241 Use explosion-proof electrical/ ventilating/ lighting equipment  
P242 Use only non-sparking tools  
P243 Take precautionary measures against static discharge  
P261 Avoid breathing vapors  
P264 Wash hands thoroughly after handling  
P271 Use only outdoors or in a well-ventilated area  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection

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Response: P303+P361+P353 IF ON SKIN (or hair): Remove/ take off immediately all contaminated clothing. Rinse skin with water/ shower.  
P370+P378 IN CASE OF FIRE: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide for extinction  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P337+P313 If eye irritation persists, get medical advice/ attention.  
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P312 Call a POISON CENTER or doctor/ physician if you feel unwell.

Storage: P403+P405+P235 Store locked up in a well-ventilated place. Keep cool.

### SECTION 3: Composition/ information on ingredients

Substance/Mixture Mixture

Other means of Identification: Not available

CAS number/ other identifiers

<i>Ingredient name</i>	<i>% by weight</i>	<i>CAS numbers</i>
Toluene	3-5	108-88-3
Isopropyl alcohol	4-6	67-63-0
Ethyl Acetate	45-50	141-78-6
N-Methyl-2-pyrrolidone	1-3	872-50-4

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

### SECTION 4: First aid measures

Description of necessary first aid measures:

Eye contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

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	Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion:	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Most important symptoms/ affects, acute and delayed	
Potential acute health affects	
Eye contact	Causes serious eye irritation
Inhalation	May be toxic if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure
Skin contact	Causes skin irritation
Ingestion	May be irritating to mouth, throat and stomach
Overexposure signs-symptoms	
Eye contact	Adverse symptoms may include the following: pain or irritation, watering, and redness
Inhalation	No specific data
Skin contact	Adverse symptoms may include the following: irritation and/ or redness
Ingestion	No specific data
Indication of immediate medical attention and special treatment needed, if necessary	
Notes to physician	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours..
Specific treatments	No specific treatment
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

### **SECTION 5: Firefighting measures**

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#### Extinguishing media

Suitable extinguishing media Use water spray, alcohol-resistant foam, dry chemical or CO<sub>2</sub>

Unsuitable extinguishing Do not use water jet

#### Special hazards arising from the substance or mixture:

Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard

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Decomposition products may include the following materials: Carbon dioxide carbon monoxide halogenated compounds carbonyl

Special protective actions for firefighters:

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool

Special protective equipment for firefighters:

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

### **SECTION 6: Accidental release measures**

Personal precautions, protective equipment and emergency procedures

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders:

If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For nonemergency personnel"

Environmental precautions:

Avoid dispersal of spilled material and runoff and contact with soil, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spills:

Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spills:

Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal

### **SECTION 7: Handling and Storage**

Precautions for safe handling

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**Protective measures** Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

### Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

### Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## SECTION 8: Exposure controls/personal protection

### Control parameters/ Occupational exposure limits

<i>Ingredient name</i>	<i>Exposure limits</i>
Toluene	<b>OSHA PEL Z2 (United States, 2/2013).</b> TWA: 200 ppm 8 hours. CEIL: 300 ppm AMP: 500 ppm 10 minutes. <b>NIOSH REL (United States, 10/2013).</b> TWA: 100 ppm 10 hours. TWA: 375 mg/m <sup>3</sup> 10 hours. STEL: 150 ppm 15 minutes. STEL: 560 mg/m <sup>3</sup> 15 minutes.

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Ethyl Acetate	<b>ACGIH TLV (United States, 4/2014).</b> <b>ACGIH TLV (United States, 4/2014).</b> TWA: 400 ppm 8 hours. TWA: 1440 mg/m <sup>3</sup> 8 hours. <b>NIOSH REL (United States, 10/2013).</b> TWA: 400 ppm 10 hours. TWA: 1400 mg/m <sup>3</sup> 10 hours. <b>OSHA PEL (United States, 2/2013).</b> TWA: 400 ppm 8 hours. TWA: 1400 mg/m <sup>3</sup> 8 hours
1-Methyl-2-pyrrolidone	Not known
Isopropyl Alcohol	<b>ACGIH TLV (United States, 4/2014).</b> TWA: 200 ppm; <b>ACGIH TLV (United States, 4/2014).</b> STEL: 400 ppm <b>OSHA TWA: (United States, 2/2013).</b> TWA: 400 ppm

### Appropriate engineering controls:

Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

**Environmental exposure controls:** Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels

### Individual protection measures:

**Hygiene measures:** Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

### Skin protection

**Hand protection:** Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during

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use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

**Body protection:** Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear antistatic protective clothing. For the greatest protection from static discharge, clothing should include anti-static overalls, boots and gloves.

**Other skin protection:** Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection:** Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

### SECTION 9: Physical and chemical properties

<b>Appearance/Form:</b>	Amber liquid
<b>Odor:</b>	Characteristic ester
<b>Density:</b>	7.83 lbs./gal
<b>Solids Content:</b>	42% +/- 1%
<b>Volatile by weight:</b>	58.01%
<b>Vapor Density:</b>	Heavier than air
<b>Solubility in Water:</b>	Slight
<b>Boiling Point:</b>	77°C (170°F)
<b>Viscosity</b>	4000 ± 1000 @ 70°F, cps

### SECTION 10: Stability and reactivity

**Reactivity** No specific test data related to reactivity for this product or its ingredients.

**Chemical stability** The product is stable.

**Possibility of hazardous reactions:** Under normal conditions of storage and use, hazardous reactions will not occur.

**Conditions to avoid** Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.

**Incompatible materials** Reactive or incompatible with the following materials: oxidizing materials

**Hazardous decomposition products:** Under normal conditions of storage and use, hazardous decomposition products should not be produced.

### SECTION 11: Toxicological information

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### Information on toxicological effects

#### Acute toxicity

<i>Material</i>	<i>Results</i>	<i>Dose</i>	<i>Species</i>
Ethyl acetate	LD50 Oral	5620 mg/ kg	Rat
Toluene	LC50 Inhalation vapor	49 g/m3	Rat
	LD50 Oral	636 mg/ kg	Rat
Isopropyl alcohol	Oral LD50	5050 mg/ kg	Rat
	Dermal LD50	12,800 mg/ kg	Rabbit
N-Methyl-2-pyrrolidone	LD50 Oral	4150 mg/kg	Rat

Carcinogenicity: Not available  
Reproductive toxicity: Not available  
Teratogenicity: Not available

#### Specific target organ toxicity (single exposure)

<i>Material</i>	<i>Category</i>	<i>Route of exposure</i>	<i>Target organs</i>
Toluene	3	Not applicable	Respiratory tract irritation and narcotic effects

#### Specific target organ toxicity (repeated exposure)

<i>Material</i>	<i>Category</i>	<i>Route of exposure</i>	<i>Target organs</i>
Toluene	2	Not determined	Not determined
N-Methyl-2-pyrrolidone		Inhalative	Rat- Liver

#### Aspiration hazard

<i>Material</i>	<i>Result</i>
Toluene	Aspiration hazard – Category 1

Information on the likely Routes of exposure: Not available

#### Potential acute health effects

Eye contact: Causes serious eye irritation  
Inhalation: May be toxic if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure  
Skin contact: Causes skin irritation  
Ingestion: Irritating to mouth, throat and stomach.  
Symptoms related to the physical, chemical and toxicological characteristics  
Eye contact: Adverse symptoms may include the following: pain or irritation, watering, redness  
Inhalation: No specific data  
Skin contact: Adverse symptoms may include the following; irritation, redness  
Ingestion: No specific data  
Delayed and immediate effects and also chronic effects from short and long term exposure  
Potential immediate: Not available



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Potential delayed effects      Not available  
 Long term exposure  
 Potential Immediate:            Not available  
 Potential delayed effects      Not available  
 Potential chronic health effects: Not available  
 General:                            May cause damage to organs through prolonged or repeated exposure.  
 Carcinogenicity                 No known significant effects or critical hazards  
 Teratogenicity                  No known significant effects or critical hazards  
 Developmental effects         No known significant effects or critical hazards  
 Fertility effects                  No known significant effects or critical hazards  
 Numerical measures of toxicity: No known significant effects or critical hazards

### SECTION 12: Ecological information

Numerical measures of toxicity/ Acute toxicity estimates

Product/ingredient name	Result	Species	Exposure
Ethyl Acetate	Acute LC50 131000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 32000 µg/l Marine water	Crustaceans - Artemia salina Nauplii	48 hours
Toluene	Acute LC50 18000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute EC50 12500 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 11600 µg/l Fresh water	Crustaceans - Gammarus pseudolimnaeus –Adult Daphnia-	48 hours
	Acute EC50 6000 µg/l Fresh water	Daphnia magna Juvenile (Fledgling, Hatchling, Weanling)	48 hours 96 hours
	Acute LC50 5500 µg/l Fresh water Chronic NOEC 1000 µg/l Fresh water	Fish- Oncorhynchus kisutch-Fry Daphnia- Daphnia magna Fish	21 days
Isopropyl alcohol	Acute LC 50: 9640 mg/ L	Crustaceans	96 hours
	Acute EC 50 : 1400 mg/ L		48 hours
1-Methyl-2-pyrrolidone	Acute LC50 > 500 mg/L	Oncorhynchus mykiss (rainbow trout) Daphnia magna (Big water flea)	96 hours
	CE50 > 1000 mg/L		24 hours

#### Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Ethyl acetate	-	-	Readily
Toluene	-	-	Readily
Isopropyl alcohol	-	-	Readily
N-Methyl-2-pyrrolidone	-	-	Readily

Bioaccumulative potential: Not available.

Mobility in soil

Soil water partition Coefficient (K<sub>oc</sub>): Not available.

Other adverse effect            No known significant effects or critical hazards

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### SECTION 13: Disposal considerations

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewer

### SECTION 14: Transport information

	DOT Classification	TDG Classification	Mexico Classification	IATA	IMDG
UN Number	Not regulated	Not regulated	UN1263	UN1263	UN1263
UN proper shipping name	-	-	PAINT	PAINT	PAINT
Transport hazard class(es)	-	-			
Packing Group	-	-	III	III	III
Environmental Hazards	No	No	No	No	No
Additional Information	<u>Special provisions:</u> Not applicable	<u>Special provisions:</u> Not applicable	<u>Special provisions:</u> Not applicable	<u>Special provisions:</u> Not applicable	<u>Emergency schedules (EmS)</u> F-E, S-E

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not available

### SECTION 15: Regulatory information

US Federal Regulations: Flammable liquid

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### State Regulations

California Prop. 65: WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

### SECTION 16: Other information

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Hazardous Material Information System (U.S.A.)

<b>HEALTH</b>	<b>2</b>
<b>FIRE</b>	<b>3</b>
<b>REACTIVITY</b>	<b>0</b>
<b>PERSONAL PROTECTION</b>	

HMIS/ NFPA Definitions:			
0	Least	3	High
1	Slight	4	Extreme
2	Moderate		

Hazard rating and rating systems: This information is intended solely for the use of individuals trained in the particular system.

This safety data sheet does not necessarily contain detailed information about materials listed in Section 3. To obtain more information about the materials listed above, please refer to their individual safety data sheets.

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality. It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.