

**Material Safety Data Sheet (Component A)**

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**Product Identification**

Chemical family: Synthetic Urethane Polymer  
Product name: Primer 450 & 460

**Composition Information / Ingredients**

Ingredient Name / CAS Number	Exposure Limits	Concentration
4'4 Diphenylmethane Diisocyanate (MDI) CAS number 101-68-8	ACGIH TLV 0.05 mg/M <sub>3</sub> (8 hour, 40 hours/week) OSHA PEL Ceiling 0.20 mg/M <sub>3</sub> NIOSH PEL/TWA 0.05 mg/M <sub>3</sub> (10 hour, 40 hours/week) NIOSH PEL Ceiling 0.20 mg/M <sub>3</sub> (10 minute)	10% by weight
Higher Oligomers of MDI CAS number 9016-87-9	OSHA: not established ACGIH: not established	11.09% by weight
2,4 Diphenylmethane Diisocyanate (MDI) CAS number 5873-54-1	OSHA: not established ACGIH: not established	0.6525% by weight
Toluene CAS number 108-88-3	OSHA PEL 200 ppm – TWA OSHA PEL 300 ppm – Ceiling OSHA VPEL 100 ppm – TWA OSHA VPEL 150 ppm – STEL ACGIH TLV 50 ppm – TWA (skin) ACGIH TLV 150 ppm – STEL (skin)	51% by weight
Urethane Prepolymer CAS 64771-77-3	Not Established	27%
Toluene diisocyanate CAS 584-84-9 CAS 91-08-7		Less than 0.05%

**Hazardous Material Identification**

Primary route(s) of entry: skin absorption, inhalation and ingestion.

Eyes: eye irritant, possible eye burn.

Skin: skin irritant and possible skin sensitizer. Direct skin contact is likely route or entry into the body. Once sensitized an individual may react to airborne levels below the TLV with the following symptoms, itching and tingling of the earlobe and neck, rash and hives, swelling of the arms and legs or other symptoms common to allergic dermatitis. Any individual having a sensitization reaction to this material should be removed from exposure to any isocyanate.

Inhalation: inhalation of vapors or spray mist may also cause irritation to the respiratory tract (dry throat, cough, shortness of breath or chest tightness). In addition, sinusitis, bronchitis or respiratory sensitization (asthma-like symptoms) may occur. Exposure to Toluene may cause nausea, headaches, dizziness or any other central nervous system effects.

**Emergency and first aid procedure**

Eyes: flush with large amounts of water for at least 15 minutes. Seek medical attention immediately.

Skin: wash exposed area thoroughly with soap and water. Be sure to wash contaminated clothing before reusing. Seek medical attention.

Inhalation: move person into fresh air. Oxygen may be administered if available and needed. Seek medical attention immediately.

Ingestion: **do not** induce vomiting. Give glass of water or milk to drink. **Do not** give anything by mouth to unconscious person. Seek medical attention immediately.

**Fire and explosion hazard data**

Flash point: 44° F (TCC, ASST. D45-70).

Flammable limits (% by volume in air): upper – 1.7, lower – 1.

Extinguishing media: water spray (fog), foam, dry chemical or carbon dioxide.

Full protective equipment with self-contained breathing apparatus should be worn.

Material contains flammable solvent. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Closed containers may explode when exposed to extreme heat. Water spray may be used to cool closed containers and prevent pressure build-up. Empty containers may contain liquid or vapor, which is flammable or explosive. **Do not** weld, burn or cut empty containers.

**Accidental release measures**

Shut off and eliminate all ignition sources. Ventilate confined spaces. Workers should avoid direct skin or eye contact, or inhalation of vapors. Absorb on dry inert material. Package for disposal.

**Special precautions and storage data**

Storage temperature: 100° F (38° C) maximum

Shelf life: minimum 1 year at 75° F (23° C)

Keep containers closed when not in use. Keep away from heat, sparks and open flame. Store in tightly sealed containers and away from moisture and direct sunlight. Wear personal protective equipment when working on equipment that may be contaminated with material.

**Personal protection**

Respiratory protection: if working in conditions where TLV is exceeded, use a chemical cartridge mask or air supply hood as required and/or approved by ANSI and OSHA.

Eye protection: splash goggles or face shield required. A full-face shield is recommended for most situations as it affords eye as well as face protection.

Skin protection: chemical resistant gloves, apron or coveralls, and face shield are required. If protective creams are used, minimize the area protected only by the cream.

Ventilation requirements: use with adequate forced air mechanical ventilation in accordance with OSHA regulations. Ventilation must be sufficient to prevent vapors from exceeding exposure limit(s) or build-up of explosive concentrations of vapor in air.

**Physical properties**

Appearance: viscous liquid  
 Odor: aromatic  
 Color: clear  
 Boiling point: 230° F  
 Specific gravity: 1.00  
 Percent volatile by volume: 50  
 Evaporation rate (ether = 1): slower  
 Vapor density (air = 1): greater  
 Solubility in water (%): negligible/reacts slowly with water

**Stability and reactivity**

Stability: stable under normal conditions.  
 Avoid contact with moisture and other materials that react with isocyanates and temperatures above maximum storage temperature.  
 Incompatibility: contact with water, alcohols, amines and strong bases.  
 Hazardous decomposition products: by high heat and fire, carbon monoxide, carbon dioxide, oxides of nitrogen, traces of HEN, isocyanate and solvent vapors.  
 Hazardous polymerization will not occur under normal conditions.

**Toxicological information**

No data

**Ecological information**

No data

**Disposal considerations**

Dispose of in accordance with local, state and federal regulations.

**Shipping information**

DOT shipping name: Paint Related Material  
 DOT hazard classification: 3  
 UN/NA number: UN1263  
 Packaging group: II  
 DOT labels required: red label, Flammable Liquid  
 DOT placards required: Flammable Liquid  
 Freight class: 55  
 Packaging, airfreight:  
 Passenger aircraft only: Packaging Inst. (see IATA): Y305 Limited Qty: 1 liter  
 Passenger/Cargo aircraft only: Packaging Inst. (see IATA): 305 Limited Qty: 5 liters  
 Cargo aircraft only: Packaging Inst. (see IATA): 307 Limited Qty: 60 liters

**Volatile organic content**

Formulation used to compute VOC/liter

Ws-Ww-Wec

Vm-Vw-Vec

Ws – Weight of solvent in grams      Vm – Volume of material  
 Ww – Weight of water                      Vw – Volume of water  
 Wec – Weight of exempt solvent        Vec – Volume of exempt solvent

Ws – 1934 grams                              1934 grams = 511 grams VOC/liter or 4.26 lb./gallon  
 Ww – 0    3.784 liters  
 Wec – 0  
 Vm – 3.784 liters (1 gallon)  
 Vw – 0  
 Vec –

**Regulatory information****California Proposition 65:**

Component A for this product contains the following chemicals that are known to cause reproductive toxicity, and are listed under California Proposition 65.

Ingredient / CAS Number	Exposure Limits	Concentration
Toluene CAS number 108-88-3	OSHA PEL 200 ppm – TWA OSHA PEL 300 ppm – Ceiling OSHA VPEL 100 ppm – TWA OSHA VPEL 150 ppm – STEL ACGIH TLV 50 ppm – TWA (skin) ACGIH TLV 150 ppm – STEL (skin)	51 %

**Material Safety Data Sheet (Component B)****Product Identification**

Chemical family: Polyol Mixture  
Product name: Primer 450 & 460  
Component B

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**Composition Information / Ingredients**

Ingredient Name / CAS Number	Exposure Limits	Concentration
Methyl Ethyl Ketone CAS Number 78-93-3	ACGIH – TLV TWA 200 ppm (v) 300 ppm (v) OSHA – PEL TWA 200 ppm (v) OSHA – PEL Interim Standard TWA 200 ppm (v) STEL 300 ppm (v)	60% by weight

Note: This chemical is subject to reporting requirements of section 313 of SARA Title III.

**Hazardous Material Identification**

Primary route(s) of entry: skin absorption, inhalation and ingestion.

Eyes: eye irritant, possible eye burn.

Skin: skin irritant and possible skin sensitize. Direct skin contact is likely route of entry into the body.

Inhalation: inhalation of vapors or spray mist may also cause irritation to the respiratory tract (dry throat, cough, shortness of breath, chest tightness). In addition, sinusitis, bronchitis, or respiratory sensitization (asthma like symptoms) may occur. Exposure to Toluene may cause nausea, headaches, dizziness or any other central nervous system effects.

**Emergency and first aid procedure**

Eyes: flush with large amounts of water for at least 15 minutes. Seek medical attention immediately.

Skin: wash exposed area thoroughly with soap and water. Be sure to wash contaminated clothing before reusing. Seek medical attention.

Inhalation: get person into fresh air. Oxygen may be administered if available and needed. Seek medical attention immediately.

Ingestion: **do not** induce vomiting. Give glass of water or milk to drink. **Do not** give anything by mouth to unconscious person. Seek medical attention immediately.

**Fire and explosion hazard data**

Flash point: 14° F, (T.C.C., ASTM. D45-70)

Flammable limits: (% by volume in air): upper – 11.0, lower - 2.2

Extinguishing media: water spray (fog), foam, dry chemical or carbon dioxide.

Special fire fighting procedures: full protective equipment with self-contained breathing apparatus should be worn.

Unusual fire and explosion hazards: material contains flammable solvent. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks, and open flames. Closed containers may explode when exposed to extreme heat. Water spray may be used to cool closed containers and prevent pressure build up. Empty containers may contain liquid or vapor, which is flammable or explosive. Do not weld, burn, or cut empty containers. Always ground container when pouring to avoid static discharge (sparking), which could ignite solvents. Do not allow free fall of more than a few inches when pouring, as dangerous static charges could be generated.

**Accidental release measures**

Shut off and eliminate all ignition sources. Ventilate confined spaces. Workers should avoid direct skin or eye contact, or inhalation of vapors. Absorb on dry inert material. Package for disposal.

**Special precautions and storage data**

Storage temperature: 100° F (38° C) maximum

Shelf life: minimum 1 year at 75° F (28° C)

Keep containers closed when not in use. Keep away from heat, sparks and open flame. Store on tightly sealed containers and away from moisture and direct sunlight. Wear personal protective equipment when working on equipment that may be contaminated with material.

**Personal protection**

Respiratory protection: if working in conditions where TLV is exceeded, use a chemical cartridge mask or air supply hood as required and/or approved by ANSI and OSHA.

Ventilation requirements: use with adequate forced air mechanical ventilation in accordance with OSHA regulations. Ventilation must be sufficient to prevent vapors from exceeding exposure limit(s) or build up of explosive concentrations of vapor in air.

Eye protection: splash goggles or face shield required. A full-face shield is recommended for most situations as it affords eye as well as face protection.

Other protective equipment: chemical resistant gloves, apron or coveralls, and face shield are required. If protective creams are used, minimize the area protected only by the cream.

**Physical properties**

Appearance: thin amber liquid

Odor: aromatic

Color: amber

Boiling point: 171° F

Specific gravity: .8672

Percent volatile by volume: 41

Evaporation rate (ether=1): slower

Vapor density (air=1): greater

Solubility in water (%): 7-8 (ethyl acetate)

**Stability and reactivity**

Stability: stable under normal conditions.

Conditions to avoid: contact with moisture. Temperatures above maximum storage temperature.

Incompatibility (materials to avoid): strong acids.

Hazardous decomposition products: by high heat and fire, carbon monoxide, carbon dioxide, and solvent vapors.

Hazardous polymerization: will not occur under normal conditions.

**Toxicological information**

No data

**Ecological information**

No data

**Component B**

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**Disposal considerations**

Dispose of in accordance with local, state, and federal regulations.

**Shipping information**

DOT shipping name: Paint Related Materials

DOT hazardous classification: 3

UN number: UN1263

Packaging Group: II

DOT labels required: red label, Flammable Liquid

DOT placards required: Flammable Liquid

Freight class: 55

Packaging, Airfreight:

Passenger aircraft only:	Packaging Inst. (see IATA): Y305	Limited Qty: 1 liter
Passenger/Cargo aircraft:	Packaging Inst. (see IATA): 305	Limited Qty: 5 liters
Cargo aircraft only:	Packaging Inst. (see IATA): 307	Limited Qty: 60 liters

**Volatile organic content**

Formulation used to compute VOC/liter

Ws-Ww-WecVm-Vw-Vec

Ws – Weight of solvent in grams	Vm – Volume of material
Ww – Weight of water	Vw – Volume of water
Wec – Weight of exempt solvent	Vec – Volume of exempt solvent

Ws – 1934 grams	1934 grams = 511 grams VOC/liter or 4.26 lb./gallon
Ww – 0	3.784 liters
Wec – 0	
Vm – 3.784 liters (1 gallon)	
Vw – 0	
Vec –	

**Regulatory information****California Proposition 65:**

Component B for this product does not contain any chemicals that are listed under California Proposition 65.

**Other information**

The data in this material safety data sheet relates only to the material designated herein and does not relate to use in combination with any other material or in any process. The information herein is furnished free of charge and is based on technical data that Industrial Polymers, Inc. believes to be reliable, and to the best of our knowledge, accurately reflects the properties and effects of the hazardous components. This product is intended for use by persons having technical skills and at their own discretion and risks. Because conditions of use of this material are outside our control we make no warranties, expressed or implied, and assume no liability in connection with any use of this material.

Prepared by: C. Boddie  
Approval date: 01/06  
Supercedes 05/02