

# MATERIAL SAFETY DATA SHEET

MSDS NO. 4

5 September 2003



## MATERIAL SAFETY DATA SHEET URETHANE CATALYST (ISOCYANATES)

MSDS NO. 4 House of Kolor Sales  
Effective Date: 05/09/03

### Manufacturer:

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### 1. PRODUCT IDENTIFICATION

**Product:** Urethane Catalyst (Isocyanates)

**Synonyms:** none

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

(See SECTION X)

#### SECTION II - HAZARDOUS INGREDIENTS

(See SECTION X)

Ingredients No.	CAS	Vapor Pressure (20°C. mm Hg)	Exposure Limit (TLV)	Ingredients No.	CAS	Vapor Pressure (20°C. mm Hg)	Exposure Limit (TLV)
1. 1,6-hexamethylene diisocyanate based polyisocyanate	822-06-0	7.5	0.005 ppm-O 1 mg/m <sup>3</sup> -O	4. Ethyl 3-ethoxypropionate	763-69-9	1.5 @ 25°C	None-A, O 50 ppm-V
2. Acetic acid ester	90438-79-2	0.8	None-A, O 50 ppm-V	5. Ethylbenzene*	100-41-4	8.5	100 ppm-A,O
3. Aromatic hydrocarbon A	64742-95-6	10.0	25 ppm-A,O as Trimethyl benzene	6. HMDI polyisocyanates	3779-63-3	None	0.035 mg/m <sup>3</sup> -A
				7. Homopolymer of hexamethylene diisocyanate	28182-81-2	Unknown	0.5 mg/m <sup>3</sup> -S 1 mg/m <sup>3</sup> -S 15 min (STEL) None-A, O

Ingredients No.	CAS	Vapor Pressure (20°C. mm Hg)	Exposure Limit (TLV)	Ingredients No.	CAS	Vapor Pressure (20°C. mm Hg)	Exposure Limit (TLV)
8. Isophorone diisocyanate based polyisocyanate	4098-71-9	5.2 @ 20°C	100 ppm-A,O 50 ppm-Aromatic petroleum solvent 0.005 ppm-Skin-Isophorone diisocyanate	12Oxo-hexyl acetate	88-230-35-7	1.6	50 ppm-V
9. Methyl isobutyl ketone	108-10-1	15.0	50 ppm-A 100 ppm-O 75 ppm-A 15 min (STEL)	13Toluene [65]	108-88-3	36.7	100 ppm-A 200 ppm-O 300 ppm-O Ceiling
10 Methyl n-amyl ketone	110-43-0	2.1	50 ppm-A 100 ppm-O	14Xylene	1330-20-7	25.0 @25°C	100 ppm-A,O 150 ppm-A,O 15 min (STEL)
11 N-butyl acetate	123-86-4	8.4	150 ppm-A,O 200 ppm-A,O 15 min (STEL)				

A = ACGIH TLV; O = OSHA; S = Supplier furnished limit; STEL = Short term exposure limit; C = Ceiling; V = Valspar limit, TLV = Threshold Limit Value  
 \* = See Section V - Special effects

### 3. HAZARDS IDENTIFICATION

#### Emergency Overview

**DANGER! HARMFUL OR FATAL IF SWALLOWED. VAPOR HARMFUL. AFFECTS CENTRAL NERVOUS SYSTEM. CAUSES SEVERE EYE IRRITATION. CAUSES IRRITATION TO SKIN AND RESPIRATORY TRACT. MAY BE HARMFUL IF ABSORBED THROUGH SKIN. CHRONIC EXPOSURE CAN CAUSE ADVERSE LIVER, KIDNEY, AND BLOOD EFFECTS. FLAMMABLE LIQUID AND VAPOR.**

Health Rating: 2 - Moderate (Life)

Flammability Rating: 3 - Severe

Reactivity Rating: 1 - None

Contact Rating: 3 - Severe

Protective Equip: Fresh Air Supplied respirator for use in isocyanate-containing environments is recommended. Wear solvent resistant gloves such as nitrile rubber. Chemical splash goggles are required if splashing is possible. Solvent resistant clothing is recommended as needed to avoid skin contact. Class B extinguisher should be available.

Work/Hygienic Practices: Wash hands thoroughly after handling product and before smoking or eating.

#### Potential Health Effects

##### Inhalation:

Inhalation of vapors may be irritating to the nose and throat and may cause difficulty in breathing. Inhalation of high concentrations may result in nausea, vomiting, headache, ringing in the ears, and severe breathing difficulties including chemical pneumonia, which may be delayed in onset. Substernal pain, cough, and hoarseness are also reported. High

vapor concentrations are anesthetic and central nervous system depressants.

**Ingestion:**

Ingestion causes burning sensation in mouth and stomach, nausea, vomiting and salivation. Minute amounts aspirated into the lungs can produce a severe hemorrhagic pneumonitis with severe pulmonary injury or death.

**Skin Contact:**

Skin contact results in loss of natural oils and often results in a characteristic dermatitis. May be absorbed through the skin.

**Eye Contact:**

Vapors cause eye irritation. Splashes cause severe irritation, possible corneal burns and eye damage.

**Chronic Exposure:**

Chronic inhalation can cause asthmatic symptoms, headache, loss of appetite, nervousness and pale skin. Repeated or prolonged skin contact may cause a skin rash. Repeated exposure of the eyes to high concentrations of vapor may cause reversible eye damage. Repeated exposure can damage bone marrow, causing low blood cell count. May damage the liver and kidneys.

**Aggravation of Pre-existing Conditions:**

Persons with pre-existing skin disorders or eye problems, or impaired liver, kidney, blood, or respiratory function may be more susceptible to the effects of the substance.

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#### 4. FIRST AID MEASURES

**Inhalation:**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician immediately.

**Ingestion:**

Aspiration hazard. If swallowed, vomiting may occur spontaneously, but **DO NOT INDUCE**. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Never give anything by mouth to an unconscious person. Call a physician immediately.

**Skin Contact:**

Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

**Eye Contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

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#### 5. FIRE FIGHTING MEASURES

**Fire:**

Flash point: See Section 16

Autoignition temperature: 464C (867F)

Flammable limits in air % by volume:

LEL: 1.0; UEL: 7.0

**Explosion:**

Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Contact with strong oxidizers may cause fire. Sealed containers may rupture when heated. Sensitive to static discharge.

**Fire Extinguishing Media:**

Dry chemical, foam or carbon dioxide. Water spray may be used to keep fire exposed containers cool, dilute spills to nonflammable mixtures, protect personnel attempting to stop leak and disperse vapors.

**Special Information:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full-face piece operated in the pressure demand or other positive pressure mode. Vapors can flow along surfaces to distant ignition source and flash back.

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## 6. ACCIDENTAL RELEASE MEASURES

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

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## 7. HANDLING AND STORAGE

Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product. Do Not attempt to clean empty containers since residue is difficult to remove. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, sparks, flame, static electricity or other sources of ignition: they may explode and cause injury or death.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Airborne Exposure Limits:**

See Section 2

**Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details. Use explosion-proof equipment.

**Personal Respirators (NIOSH Approved):**

Use a full-face piece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres. Where respirators are required, you must have a written program covering the basic requirements in the OSHA respirator standard. These include training, fit testing, medical approval, cleaning, maintenance, cartridge change schedules, etc. See 29CFR1910.134 for details.

**Skin Protection:**

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

**Eye Protection:**

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:**

Opaque or translucent viscous liquid with organic solvent odor.

**Odor:**

Characteristic odor.

**Solubility:**

Insoluble in water.

**Specific Gravity:**

See Section 16

**pH:**

Not applicable.

**% Volatiles by volume:**

See Section 16

**Boiling Point:**

165 TO 354°F

**Vapor Density:**

Heavy Than Air

**Evaporation Rate:**

Slower Than Ether

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## 10. STABILITY AND REACTIVITY

**Stability:**

Stable under ordinary conditions of use and storage.

**Hazardous Decomposition Products:**

Involvement in a fire causes formation of carbon monoxide and unidentified organic

components.

**Hazardous Polymerization:**

Will not occur.

**Incompatibilities:**

Strong oxidizing agents and strong acids.

**Conditions to Avoid:**

Heat, flames, ignition sources and incompatibles.

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## 11. TOXICOLOGICAL INFORMATION

**Toxicological Data:**

Xylene: oral rat LD50: 4300 mg/kg; inhalation rat LC50: 5000 ppm/4H; skin rabbit LD50: > 1700 mg/kg; Irritation eye rabbit: 87 mg mild (Std. Draize); irritation skin rabbit 500 mg/24 moderate (Std. Draize); investigated as a tumorigen, mutagen, reproductive effector.

Ethyl benzene: oral rat LD50: 3500 mg/kg; skin rabbit LD50: 17800 uL/kg; investigated as a tumorigen, mutagen, reproductive effector.

**Reproductive Toxicity:**

May cause teratogenic effects.

-----\Cancer Lists\-----

Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
m-Xylene (108-38-3)	No	No	3
o-Xylene (95-47-6)	No	No	3
p-Xylene (106-42-3)	No	No	3
Ethyl Benzene (100-41-4)	No	No	2B

**SPECIAL EFFECTS:**

**Aromatic hydrocarbon A, B** - Laboratory studies with rats have shown that petroleum distillates cause kidney damage and kidney or liver tumors. These effects were not seen in similar studies with guinea pigs, dogs, or monkeys. Several studies evaluating petroleum workers have not shown a significant increase of kidney damage or an increase in kidney or liver tumors. **Ethylbenzene** - Tests by the NTP have shown that ethylbenzene is a carcinogen in animals. The relevance to humans is unknown. **N-butyl acetate** - May cause abnormal liver function. Tests for embryo toxic activity in animals has been inconclusive. Has been toxic to the fetus in laboratory animals at doses that are toxic to the mother. **Mineral spirits** - Laboratory studies with rats have shown that petroleum distillates cause kidney damage and kidney or liver tumors. These effects were not seen in similar studies with guinea pigs, dogs, or monkeys. Several studies evaluating petroleum workers have not shown a significant increase of kidney damage or an increase in kidney or liver tumors. May cause temporary upper respiratory and/or lung irritation with cough, difficult breathing, or shortness of breath. **Methyl ethyl ketone** - High concentrations have caused embryo toxic effects in laboratory animals. Methyl ethyl ketone has been demonstrated to potentiate (i.e. shorten the time of onset) the peripheral neuropathy caused by either n-hexane or methyl n-butyl ketone. MEK by itself has not been demonstrated to cause peripheral neuropathy. Liquid splashes in the eye may result in chemical burns. **Toluene** - Recurrent overexposure may result in liver and kidney injury. High airborne levels have produced irregular heartbeats in animals and occasional palpitations in humans. Rats exposed to very high airborne levels have exhibited high frequency hearing deficits. The significance of this to man is unknown. **Warning:** This chemical is known to the State of California to cause reproductive harm. **Xylene** - High

concentrations have caused embryo toxic effects in laboratory animals. Recurrent overexposure may result in liver and kidney injury. Can be absorbed through the skin in harmful amounts.

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## 12. ECOLOGICAL INFORMATION

### **Environmental Fate:**

When released into the soil, this material may evaporate to a moderate extent. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material may biodegrade to a moderate extent. When released into water, this material may evaporate to a moderate extent. When released into water, this material may biodegrade to a moderate extent. When released into the air, this material may be moderately degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is expected to have a half-life of less than 1 day. This material is not expected to significantly bioaccumulate. (mixed xylenes: octanol / water partition coefficient 3.1 - 3.2; bioconcentration factor = 1.3, eels)

### **Environmental Toxicity:**

This material is expected to be slightly toxic to aquatic life. The LC50/96-hour values for fish are between 10 and 100 mg/l.

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## 13. DISPOSAL CONSIDERATIONS

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

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## 14. TRANSPORT INFORMATION

### **Domestic (Land, D.O.T.)**

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**Proper Shipping Name:** Paint  
**Hazard Class:** 3  
**UN/NA:** UN1263  
**Packing Group:** II

### **International (Water, I.M.O.)**

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**Proper Shipping Name:** Paint  
**Hazard Class:** 3  
**UN/NA:** UN1263  
**Packing Group:** II

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## 15. REGULATORY INFORMATION

All Ingredients are TSCA and DSL listed.  
OSHA Hazard Class: Flammable Liquid

### **WHMIS:**

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

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## 16. OTHER INFORMATION

**NFPA Ratings:** Health: **2** Flammability: **3** Reactivity: **0**

### **Label Hazard Warning:**

Danger! Extremely flammable liquid and vapor. Vapors may cause flash fire. Vapor harmful. Causes eye irritation. Causes skin irritation. Harmful or fatal if swallowed. Vapor harmful. May affect the brain or nervous system causing dizziness, headache or nausea. Causes nose and throat irritation. Causes lung irritation. Overexposure may cause kidney damage. May be harmful if absorbed through skin. NOTICE: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

WARNING: This product contains a chemical(s) known to the State of California to cause birth defects or other reproductive harm.

### **Label First Aid:**

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. (Thoroughly clean or destroy contaminated shoes). If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical attention immediately. If swallowed, do not induce vomiting. Get medical attention immediately.

### **Label Precautions:**

Vapors may ignite explosively. Keep away from heat, sparks and flame. Vapors may cause flash fire. Do not smoke. Extinguish all flames and pilot lights, and turn off stoves, heaters, electric motors and other sources of ignition during use and until all vapors are gone. Prevent build-up of vapors by opening all windows and doors to achieve cross-ventilation. Use only with adequate ventilation. Do not breathe vapors or spray mist. Ensure fresh air entry during application and drying. If you experience eye watering, headache or dizziness or if air monitoring demonstrates vapor/mist levels are above applicable limits, wear an appropriate, properly fitted respirator (NIOSH approved) during and after application. Follow respirator manufacturer's directions for respirator use. Do not get in eyes, on skin or clothing. Wash thoroughly after handling. KEEP OUT OF REACH OF CHILDREN.

### **Product Use:**

Automotive Refinish

## Revision Information:

MSDS Section(s) changed since last revision of document include: 2.

## Contents/Physical Properties for Products

**Section 313 Supplier Notification:** The chemicals listed below with percentages are subject to the reporting requirements of Section 313 of the Emergency Planning and Right-To-Know Act of 1986 and of 40 CFR 372.

See Section 2 for Chemical Properties

**KU-100** - Homopolymer of hexamethylene diisocyanate<sup>1</sup>, Methyl isobutyl ketone (18.1%), Oxo-hexyl acetate, Xylene (13.7%), Ethylbenzene\* (2.9%), Aromatic hydrocarbon A, N-butyl acetate, Toluene (0.4%) [65], GAL WT: 8.5 WT PCT SOLIDS: 45 VOL. PCT SOLIDS: 40 VOC: 4.66 LB/GL H: 3 F: 3 R: 0 FLASH POINT: 60°F

**KU-150** - PCTBF (parachlorobenzotrifluoride), Homopolymer of hexamethylene diisocyanate<sup>1</sup>, Aromatic hydrocarbon A, N-butyl

acetate, [65], GAL WT: 10.0 WT PCT SOLIDS:30 VOL. PCT SOLIDS:40 VOC: 4.66 LB/GL H: 3 F: 3 R: 0 FLASH POINT: 45°F

**KU-190** HMIS: H2\*F3 R1 CONTENTS: PCTBF (parachlorobenzotrifluoride), Homopolymer of Hexamethylene Diisocyanate, Hexamethylene diisocyanate (HDI), PHYSICAL PROPERTIES-- SPECIFIC GRAVITY: 1.25, COATING V.O.C.: 0.00 lb/gal, MATERIAL V.O.C.: 0.00 lb/gal, FLASH POINT: 109 deg F, VOLATILE BY WEIGHT: 55.57%, VOLATILE BY VOLUME: 52.18%

**KU-500** - 1,6-hexamethylene diisocyanate based polyisocyanates, HMDI polyisocyanates, Isophorone diisocyanate based polyisocyanate (13.4%), Methyl isobutyl ketone (17.9%), Ethyl 3-ethoxypropionate, Xylene (12.8%), N-butyl acetate, Ethylbenzene\* (1.0%), GAL WT: WT PCT SOLIDS: VOL. PCT SOLIDS: VOC: 4.58 LB/GL H: 2 F: 3 R: 0 FLASH POINT: 60°F

## Disclaimer:

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