

MATERIAL SAFETY DATA SHEET

PRODUCT NAME : 900 Catalyst
MSDS CODE : MSDS11
CHEMICAL NAME : Alkyl Sulphonic Acid Ester of Phenol and Polyisocyanate

HMIS CODES : H F R P
3* 1 1 B
(* Chronic)

SECTION 1 - PRODUCT AND MANUFACTURE IDENTIFICATION

Common names : Aromatic Polyisocyanates
Manufacturer's name : International Coatings Company, Inc.
Address : 13929 East 166th Street Cerritos, CA 90702-7666
Emergency phone : (800) 255-3924 Name of preparer : A .N. Nucup
Business phone : (562) 926-1010 Date prepared : 03/10/09
Supersedes dated : 02/12/08

SECTION II - HAZARDOUS INGREDIENTS / SARA III INFORMATION

Ingredients	ACGIH (TLV)	OSHA (PEL)	CAS Number	Vapor pressure mm Hg @ Temp	Weight Percent
Toluene Diisocyanate Mixed Isomers	0.005 ppm		26471-62-5		0.1 – 1.0

Warning: This product contains chemical(s) known to the State of California to cause cancer. This statement is made pursuant to Proposition 65.

Hazardous Components

The 2,4-TDI (CAS# 584-84-9) and the 2,6-TDI (CAS# 91-08-7) isomer mixture is known as Toluene Diisocyanate (CAS# 26471-62-5). For Regulatory and State Right to Know information on this product CAS# 26471-62-5 and its isomers 2,4-TDI and 2,6-TDI, please refer to regulatory information section of this MSDS.

SECTION III - PHYSICAL / CHEMICAL CHARACTERISTICS

FORM: Liquid COLOR: Colorless to light yellow
ODOR: Strong, pungent pH: Not Established
FREEZING POINT: -15 °C (5 °F)
BOILING POINT/RANGE: Approx. 251.67 – 253.89°C (485 – 489 °F)
VAPOR PRESSURE: 6 hPa @ 20 °C (68 °F)
12 hPa @ 50°C (122°F)
13 hPa @ 55°C (131°F)
DENSITY: 1.13 g/cm³
SOLUBILITY IN WATER: Insoluble
DECOMPOSITION TEMPERATURE: 176.67°F (350°C)
VOC CONTENT: Not Established
VISCOSITY, DYNAMIC: Approx. 8,000 – 13,000 mPas @ 22.78 °C (73 °F)

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 225 °C (437 °F) (closed cup)
LOWER EXPLOSION LIMIT: 0.5 %(V) for the solvent
UPPER EXPLOSION LIMIT: 2.5 %(V) for the solvent
FLAMMABLE LIMITS IN AIR BY VOLUME - Lower: Not Determined Upper: Not Determined
AUTOIGNITION TEMPERATURE: 430° C (806°F)
EXTINGUISHING MEDIA: Dry Chemical, Carbon Dioxide (CO₂), Foam, Water Spray for Large Fires

SPECIAL FIRE FIGHTING PROCEDURES: Firefighters should wear NFPA compliant structural fire fighting protective equipment, including self-contained breathing apparatus and NFPA compliant helmet, hood, boots and gloves. Avoid contact with product. Decontaminate equipment and protective clothing prior to reuse. During a fire, isocyanate vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. Exposure to heated diisocyanate can be extremely dangerous.

UNUSUAL FIRE/EXPLOSION HAZARDS: Closed container may forcibly rupture under extreme heat or when contents are contaminated with water (CO₂ formed). Use cold-water spray to cool fire-exposed containers to minimize the risk of rupture. Large fires can be extinguished with large volumes of water applied from a safe distance, since reaction between water and hot diisocyanate can be vigorous.

SECTION V - REACTIVITY DATA

STABILITY : Stable

CONDITIONS TO AVOID : High Heat and Fire, Moisture

INCOMPATIBILITY (MATERIALS TO AVOID): Water, Amines, Strong Bases, Alcohols, Copper Alloys, Aluminum.

HAZARDOUS DECOMPOSITION PRODUCTS: By Fire and High Heat: Carbon Dioxide (CO₂), Carbon Monoxide (CO), Oxides of Nitrogen (NO_x), Dense Black Smoke, Hydrogen Cyanide, Isocyanate, Isocyanic Acid, Other Undetermined Compounds.

HAZARDOUS POLYMERIZATION: Contact with moisture, other materials that react with isocyanates, or temperatures above 350°F (177°C), may cause polymerization.

SECTION VI- HEALTH HAZARD DATA FOR PRODUCT: 900 CATALYST

INHALATION – ACUTE: Diisocyanate vapors or mist at concentrations above the TLV or PEL can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction). Persons with a preexisting, nonspecific bronchial hyperreactivity can respond to concentrations below the TLV or PEL with similar symptoms as well as asthma attack or asthma-like symptoms. Exposure well above the TLV or PEL may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). Chemical or hypersensitivity pneumonitis, with flu-like symptoms (e.g., fever, chills), has also been reported. These symptoms can be delayed up to several hours after exposure. These effects are usually reversible.

Toluene Diisocyanate Mixed Isomers as a component may cause respiratory tract irritation with symptoms of coughing, sore throat and runny nose. Expected to be highly toxic by inhalation. May cause allergic respiratory reaction with symptoms of coughing, wheezing, shortness of breath, bronchospasm, and reduced lung function.

INHALATION – CHRONIC: As a result of previous repeated overexposures or a single large dose, certain individuals may develop sensitization to diisocyanates (asthma or asthma-like symptoms) that may cause them to react to a later exposure to diisocyanates at levels well below the TLV or PEL. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath or asthmatic attack, could be immediate or delayed up to several hours after exposure. Extreme asthmatic reactions can be life threatening. Similar to many nonspecific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Sensitization can be permanent. Chronic overexposure to diisocyanates has also been reported to cause lung damage (including fibrosis, decrease in lung function) that may be permanent.

SKIN - ACUTE: Causes irritation with symptoms of reddening, itching, and swelling. Persons previously sensitized can experience allergic skin reaction with symptoms of reddening, itching, swelling, and rash. Cured material is difficult to remove.

Toluene Diisocyanate Mixed Isomers as a component may cause allergic skin reaction with symptoms of reddening, itching, swelling, and rash. Causes irritation with symptoms of reddening, itching, and swelling. Essentially non-toxic by skin absorption.

SKIN – CHRONIC: Prolonged contact can cause reddening, swelling, rash, and, in some cases, skin sensitization.

EYE – ACUTE: Causes irritation with symptoms of reddening, tearing, stinging, and swelling. May cause temporary corneal injury. Vapor may cause irritation with symptoms of burning and tearing.

Toluene Diisocyanate Mixed Isomers as a component causes irritation with symptoms of reddening, tearing, stinging, and swelling. May cause corneal injury.

EYE – CHRONIC: Prolonged vapor contact may cause conjunctivitis.

INGESTION – ACUTE: May cause irritation; Symptoms may include abdominal pain, nausea, vomiting, and diarrhea.

Ingestion of Toluene Diisocyanate Mixed Isomers as a component may cause symptoms that include abdominal pain, nausea, vomiting, and diarrhea.

INGESTION – CHRONIC: No data available on 900 Catalyst.

TOXICOLOGICAL INFORMATION FOR PRODUCT, 900 CATALYST:

Note: Toxicity data are for TDI mixed isomers

Acute Oral Toxicity

LD50: 4,130 mg/kg (rat, female)

LD50: 5,110 mg/kg (rat, male)

Acute Inhalation Toxicity

LC50: 0.48 mg/l, 1 hr (Rat, Male/Female)

LC50: 3.5 mg/l, 4 h (rat)

Acute dermal toxicity

LD50: > 9,400 mg/kg (rabbit)

Skin Irritation

Rabbit, Draize Test, Exposure Time: 24 hrs - Moderately irritating

Eye Irritation

Rabbit, Draize Test, Exposure Time: 24 hrs - Severely irritating

Sensitization

Dermal: sensitizer (Guinea Pig, Maximization Test (GPMT))

Inhalation: sensitizer (Guinea Pig)

Repeated Dose Toxicity

90 Days, Inhalation: NOAEL: 30 mg/kg, (rat, Male/Female, daily)

30 Days, Inhalation: NOAEL: 1.5 mg/kg, (guinea pig,)

120 Days, Inhalation: NOAEL: < 1.5 ppm, (dog, male, daily)

Mutagenicity

Genetic Toxicity in Vitro:

Ames: positive (Salmonella typhimurium, Metabolic Activation: with)

Sister Chromatid Exchange: positive (human lymphocytes)

Sister Chromatid Exchange: negative (Chinese hamster ovary (CHO) cells)

Genetic Toxicity in Vivo:

Micronucleus Assay: negative (rat,)

Unscheduled DNA synthesis: negative (rat,)

Toxicity to Reproduction/Fertility

Two generation study, inhalation, daily, (rat, Male/Female) NOAEL (parental): < 0.02 ppm (0.1 mg/m³),

NOAEL (F1): 0.02 ppm (0.1 mg/m³), NOAEL (F2): 0.3 ppm (2 mg/m³)

No effects on Reproductive parameters observed at doses tested.

Developmental Toxicity/Teratogenicity

rat, female, inhalation, Days 6-15, daily, NOAEL (teratogenicity): 0.5 ppm (3.6 mg/m³), NOAEL (maternal): 0.1 ppm (0.7mg/m³)

Fetotoxicity seen only with maternal toxicity. No Teratogenic effects observed at doses tested.

Carcinogenicity

Rat, Male/Female, oral, 106 Weeks, daily – positive.

NTP and IARC evaluated TDI as a mixture of the 2,4 and 2,6 isomers.

Toluene Diisocyanate Mixed Isomers: NTP Hazard Designation: Anticipated Carcinogen.

IARC Overall evaluation: 2B Possible Carcinogen.

FIRST AID MEASURES

Eye Contact

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Use lukewarm water if possible. Use fingers to ensure that eyelids are separated and that the eye is being irrigated. Then remove contact lenses, if easily removable, and continue eye irrigation for not less than 15 minutes. Get medical attention.

Skin Contact

Immediately remove contaminated clothing and shoes. Wash off with soap and water. Use lukewarm water if possible. Wash contaminated clothing before reuse. For severe exposures, immediately get under safety shower and begin rinsing. Get medical attention if irritation develops.

Inhalation

Move to an area free from further exposure. Get medical attention immediately. Administer oxygen or artificial respiration as needed. Asthmatic symptoms may develop and may be immediate or delayed up to several hours. Extreme asthmatic reactions can be life threatening.

Ingestion

Do not induce vomiting. Wash mouth out with water. Do not give anything by mouth to an unconscious person. Get medical attention.

Notes to physician

Eyes: Stain for evidence of corneal injury. If cornea is burned, instill antibiotic/steroid preparation as needed. Workplace vapors could produce reversible corneal epithelial edema impairing vision. Skin:

This compound is a skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burn.

Ingestion: Treat symptomatically. There is no specific antidote. Inducing vomiting is contraindicated because of the irritating nature of the compound. Inhalation: Treatment is essentially symptomatic. An individual having a dermal or pulmonary sensitization reaction to this material should be removed from further exposure to any diisocyanate.

SECTION VII – SAFE HANDLING AND USE

STORAGE TEMPERATURE: minimum 69.8 °F (21 °C); maximum 109.4 °F (43 °C)

STORAGE PERIOD: 6 Months

HANDLING/STORAGE PRECAUTIONS: Do not breathe vapors, mists, or dusts. Use adequate

ventilation to keep airborne isocyanate levels below the exposure limits. Wear respiratory protection if material is heated, sprayed, used in a confined space, or if the exposure limit is exceeded. Warning properties (irritation of the eyes, nose and throat or odor) are not adequate to prevent overexposure from inhalation. This material can produce asthmatic sensitization upon either single inhalation exposure to a relatively high concentration or upon repeated inhalation exposures to lower concentrations. Individuals with lung or breathing problems or prior allergic reactions to isocyanates must not be exposed to vapor or spray mist. Avoid contact with skin and eyes. Wear appropriate eye and skin protection. Wash thoroughly after handling. Do not breathe smoke and gases created by overheating or burning this material. Decomposition products can be highly toxic and irritating. Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected.

SPILL AND LEAK PROCEDURES: Evacuate non-emergency personnel. Isolate the area and prevent access. Remove ignition sources. Notify management. Put on protective equipment. Control source of the leak. Ventilate. Contain the spill to prevent spread into drains, sewers, water supplies, or soil. Call International Coatings Company (800) 255-3924 for assistance and advice. Major Spill or Leak (Standing liquid): To minimize vapor, cover the spillage with fire fighting foam (AFFF). Released material may be pumped into closed, but not sealed, metal container for disposal. Process can generate heat. Minor Spill or Leak (Wet Surface): Cover spill area with suitable absorbent material (Kitty Litter, Oil-Dri®, etc). Saturate absorbent material with neutralization solution and mix. Wait 15 minutes. Collect material in open-head metal containers. Repeat applications of decontamination solution, with scrubbing, followed by absorbent until the surface is decontaminated. Check for residual surface contamination. Swype® test kits have been used for this purpose. Apply lid loosely and allow containers to vent for 72 hours to let carbon dioxide (CO₂) escape.

PREPARING WASTES FOR DISPOSAL (ADDITIONAL SPILL PROCEDURES/NEUTRALIZATION):

Neutralization solutions:

- (1) Colorimetric Laboratories Inc. (CLI) decontamination solution.
- (2) A mixture of 75% water, 20% non-ionic surfactant (e.g. Poly-Tergent SL-62, Tergitol TMN-10) and 5% n-propanol.
- (3) A mixture of 80% water, 20% non-ionic surfactant (e.g. Poly-Tergent SL-62, Tergitol TMN-10).
- (4) A mixture of 90% water, 3-8% ammonium hydroxide or concentrated ammonia, and 2% liquid detergent

NOTE: Dispose of all wastes in accordance with Federal, State, and Local regulations. Incineration is the preferred method. Empty containers retain product residue; observe all precautions for product. Do not heat or cut empty container with electric or gas torch because highly toxic vapors and gases are formed. Do not reuse without thorough commercial cleaning and reconditioning. If container is to be disposed, ensure all product residues are neutralized and removed prior to disposal.

INTERNATIONAL COATINGS CO. requires immediate notification (800-255-3924) when this product is unintentionally released from its container during its course of distribution, regardless of the amount released. Distribution includes transportation, storage incidental to transportation, loading and unloading. Such notification must be immediate and made by the person having knowledge of the release.

SECTION VIII - SPECIAL PROTECTION INFORMATION

INDUSTRIAL HYGIENE/VENTILATION MEASURES: Local exhaust should be used to maintain levels below the TLV and PEL whenever diisocyanate is handled, processed, or spray-applied. At normal room temperatures (70°F) TDI levels quickly exceed the TLV or PEL unless properly ventilated. Standard reference sources regarding industrial ventilation (e.g., ACGIH Industrial Ventilation Manual) should be consulted for guidance about adequate ventilation. To ensure that published exposure limits have not been exceeded, monitoring for airborne diisocyanate should become part of the overall employee exposure characterization program. NIOSH, OSHA, and others have developed sampling and analytical methods. Methods can be made available, upon request.

RESPIRATORY PROTECTION: At normal room temperatures, airborne TDI can exceed the ACGIH TLV-

TWA; therefore, in inadequately ventilated environments, respiratory protection must be worn. The type of respiratory protection selected must comply with the requirements set forth in OSHA's Respiratory Protection Standard (29 CFR 1910.134). The type of respiratory protection available includes (1) an atmosphere-supplying respirator such as a self-contained breathing apparatus (SCBA) or a supplied air respirator (SAR) in the positive pressure or continuous flow mode, or (2) an air-purifying respirator (APR). If an APR is selected then (a) the cartridge must be equipped with an end-of-service life indicator (ESLI) certified by NIOSH, or (b) a change out schedule, based on objective information or data that will ensure that the cartridges are changed out before the end of their service life, must be developed and implemented. The basis for the change out schedule must be described in the written respirator program. Further, if an APR is selected, the airborne diisocyanate concentration must be no greater than 10 times the TLV or PEL. An organic vapor (OV) cartridge is recommended for APR use.

HAND PROTECTION: Gloves should be worn. Nitrile rubber shows excellent resistance. Butyl rubber, neoprene, and PVC are also effective.

EYE PROTECTION: When directly handling liquid product, eye protection is required. Examples of eye protection include a chemical safety goggle, or chemical safety goggle in combination with a full face shield when there is a greater risk of splash.

SKIN AND BODY PROTECTION: Avoid all skin contact. Depending on the conditions of use, cover as much of the exposed skin area as possible with appropriate clothing to prevent skin contact.

MEDICAL SURVEILLANCE: All applicants who are assigned to an isocyanate work area should undergo a pre-placement medical evaluation. A history of eczema or respiratory allergies such as hay fever, are possible reasons for medical exclusion from isocyanate areas. Applicants who have a history of adult asthma should be restricted from work with isocyanates. Applicants with a history of prior isocyanate sensitization should be excluded from further work with isocyanates. A comprehensive annual medical surveillance program should be instituted for all employees who are potentially exposed to diisocyanates. Once a worker has been diagnosed as sensitized to any isocyanate, no further exposure can be permitted.

ADDITIONAL PROTECTIVE MEASURES: Emergency showers and eye wash stations should be available. Educate and train employees in the safe use and handling of this product. Follow all label instructions.

SECTION IX – TRANSPORTATION AND REGULATORY INFORMATION

TRANSPORTATION:

LAND TRANSPORT (DOT):

PROPER SHIPPING NAME: Environmentally hazardous substances, liquid, n.o.s.
HAZARD CLASS OR DIVISION: 9
UN/NA NUMBER: UN3082
PACKAGING GROUP: III
HAZARD LABEL(S): Class 9
RSPA/DOT REGULATED COMPONENTS: Toluene Diisocyanate Mixed Isomers
REPORTABLE QUANTITY: 12,500 lb

SEA TRANSPORT (IMDG):

PROPER SHIPPING NAME: ENVIRONMENTALLY HAZARDOUS SUBSTANCE,
LIQUID, N.O.S.
HAZARD CLASS OR DIVISION: 9
UN-NO: UN3082
PACKAGING GROUP: III
HAZARD LABEL(S): Miscellaneous

AIR TRANSPORT (ICAO/IATA):

PROPER SHIPPING NAME: Environmentally hazardous substance, liquid, n.o.s.
HAZARD CLASS OR DIVISION: 9

UN-N0: UN3082
PACKAGING GROUP: III
HAZARD LABEL(S): Miscellaneous

ADDITIONAL TRANSPORTATION INFORMATION: When in individual containers of less than the Product RQ, this material ships as non-regulated., 49CFR: Only bulk packages (greater than 119 gallons) are regulated as Marine Pollutants when shipped by highway or rail (See 49 CFR 171.4 (c)).

REGULATORY INFORMATION

UNITED STATES FEDERAL REGULATIONS

OSHA HAZCOM STANDARD RATING: Hazardous
U.S. TOXIC SUBSTANCES CONTROL ACT: Listed on the TSCA Inventory.
U.S. EPA CERCLA HAZARDOUS SUBSTANCES (40 CFR 302):

Components

Toluene Diisocyanate Mixed Isomers Reportable quantity: 100 lbs

SARA SECTION 311/312 HAZARD CATEGORIES: Acute Health Hazard, Chronic Health Hazard, Reactivity Hazard

U.S. EPA EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT (EPCRA) SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCE (40 CFR 355, APPENDIX A):

Components

None

U.S. EPA EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT (EPCRA) SARA TITLE III SECTION 313 TOXIC CHEMICALS (40 CFR 372.65) - SUPPLIER NOTIFICATION REQUIRED:

Components

Toluene Diisocyanate Mixed Isomers

U.S. EPA RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) COMPOSITE LIST OF HAZARDOUS WASTES AND APPENDIX VIII HAZARDOUS CONSTITUENTS (40 CFR 261):

Material Name: 900 Catalyst

If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)

STATE RIGHT-TO-KNOW INFORMATION

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

Massachusetts, New Jersey or Pennsylvania Right to Know Substance Lists:

<u>Weight %</u>	<u>Components</u>	<u>CAS-No.</u>
>=1%	Alkylsulfonate, Phenyl Ester	70775-94-9
>= 1%	Benzene, 1,3-diisocyanato-2 methyl-polymer with 2,4 diisocyanato-1-methylbenzene	31370-61-3

New Jersey Environmental Hazardous Substances List and/or New Jersey RTK Special Hazardous Substances Lists:

<u>Weight %</u>	<u>Components</u>	<u>CAS-No.</u>
0.1-1%	Toluene Diisocyanate Mixed Isomers	26471-62-5

California Prop. 65:

Warning! This product contains chemical(s) known to the State of California to be carcinogenic.

<u>Weight %</u>	<u>Components</u>	<u>CAS-No.</u>
0.1-1%	Toluene Diisocyanate Mixed Isomers	26471-62-5

OTHER INFORMATION:

The handling of products containing reactive TDI polyisocyanate/prepolymer and/or monomeric TDI requires appropriate protective measures referred to in this MSDS. These products are therefore recommended only for use in industrial or trade (commercial) applications. They are not suitable for use in Do-It-Yourself applications.

International Coatings Co. Inc.'s method of hazard communication is comprised of Product Labels and Material Safety Data Sheets. HMIS and NFPA ratings are provided by International Coatings Co. Inc. as a customer service.

HMIS CODE

<u>Code Definition</u>	
H: Health	3*
F: Flammable	1
R: Reactivity	1
P: Personal Protection	B
<u>Hazard Index</u>	
4: Severe Hazard	
3: Serious Hazard (*Chronic Health Hazard)	
2: Moderate Hazardous	
1: Slight Hazard	
0: Minimal Hazard	
B :Safety glasses, neoprene gloves.	

International Coatings Co., Inc. believes that to the best of its knowledge the information provided

herein is factual and the recommendations made are accurate as of the date shown. However, no representation or warranty is made as to their completeness or accuracy. The information in this MSDS relates only to the specific material designated herein. International Coatings Company assumes no legal responsibility for use of or reliance upon the information in this MSDS.