

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: Nukote PU Foam-A-Polyol

SECTION I - COMPANY IDENTIFICATION

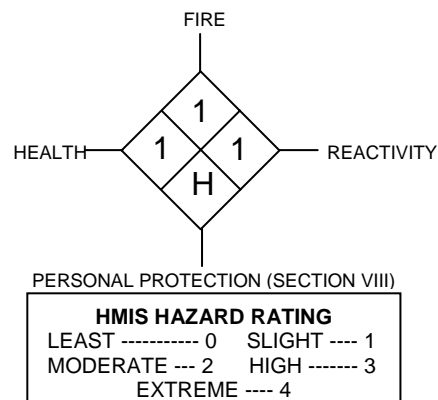
COMPANY NAME: Nukote Coating Systems International

ADDRESS: Suite 7H, Aihe Mansion, No. 629 Lingling Road, Shanghai 200030, China
704 228th Avenue NE, No. 736, Sammamish, WA 98074, USA

INFORMATION PHONE: (China) 021-54249811, (USA) 425-702-1973

EMERGENCY CONTACT: (CHEMTREC): 800-424-9300
Outside USA and Canada, call CHEMTREC collect: 703-527-3887

DATE REVISED: MAY 17, 2005



SECTION II - HAZARDOUS INGREDIENTS/SARA III INFORMATION

HAZARDOUS COMPONENTS	OCCUPATIONAL EXPOSURE LIMITS				VAPOR PRESSURE	
	CAS NUMBER	OSHA PEL	ACGIH TLV	MFG TLV	mm	Hg @ TEMP
DICHLOROFLUROETHANE	1717-00-6	N/E	N/E			
CHLORODIFLUROMETHANE	75-45-6	N/E	N/E			

* No toxic chemical(s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372.
Information concerning non-hazardous ingredients is considered a Trade Secret.

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT: 130°C

SPECIFIC GRAVITY: (H₂O=1): N/A

COATING V.O.C.: 9 lb/gal

VAPOR DENSITY: Heavier than air

EVAPORATION RATE: N/A

SOLUBILITY IN WATER: slightly

APPEARANCE AND ODOR: Viscous liquid, yellowish, ether like odor

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: >130°C

METHOD USED: TCC

FLAMMABLE LIMITS IN AIR BY VOLUME: Lower: N/E

Upper: N/E

EXTINGUISHING MEDIA: Dry power, foam, carbon dioxide, water fog.

SPECIAL FIRE FIGHTING PROCEDURES: Wear NIOSH approved self-contained breathing apparatus in positive pressure mode with full-face piece. Boots, gloves (neoprene), goggles, and full protective clothing are also required.

UNUSUAL FIRE AND EXPLOSION HAZARDS: No known unusual fire or explosion hazards.

SECTION V - REACTIVITY DATA

STABILITY: Stable under normal conditions.

CONDITIONS TO AVOID: Heat, high temperature and open flame. Contact with incompatible materials in a closed system will cause buildup of pressure.

INCOMPATIBILITY (MATERIALS TO AVOID): Avoid moisture to maintain the product quality.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: HCL, HF, CO and CO₂.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS Reactions: Exothermic reaction with isocyanates.

SECTION VI - HEALTH HAZARD DATA

SKIN CONTACT: Direct contact is corrosive. Frequent and prolonged contact can cause irritation and/or dermatitis.

EYE CONTACT: Can be irritating to the eyes.

SKIN ABSORPTION: Systemically toxic concentrations of this product will probably be absorbed through human skin.

INGESTION: Irritation or chemical burns of the mouth, pharynx, esophagus and stomach can develop following ingestion.

INHALATION: Can irritate eyes, nose and respiratory passages. Overexposure may induce headaches, dizziness, drowsiness, unconsciousness, irregular heartbeat, and suffocation. Inhalation at high levels will produce respiratory difficulties, loss of coordination. Overexposure may cause tremors, confusion, irritation and possible cardiac sensitization.

HEALTH HAZARDS: ACUTE: Exposure may cause mucous membrane and respiratory tract irritation, tightness of chest, headache, shortness of breath, dry cough, abdominal distress and central nervous systems depression. **CHRONIC:** Repeated exposure above current occupational limits may cause an allergic sensitization of the respiratory tract. This is characterized by an asthma-like response upon re-exposure to the chemical. The symptoms may include coughing, wheezing, shortness of breath and chest tightness. Chronic overexposure may cause liver and/or kidney damage.

CARCINOGENICITY: NTP: No

IARC Monographs: No

OSHA Regulated: No

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Cardiovascular disease, asthma or asthmatic bronchitis, allergic disease, chronic respiratory disease, sinusitis, headache and dizziness, diseases of central nervous system.

EMERGENCY AND FIRST AID PROCEDURES: EYE CONTACT: Immediately flush eyes with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Have eyes examined and treated by medical personnel immediately. **INHALATION:** Remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is labored, give oxygen. Consult medical personnel immediately. **SKIN CONTACT:** Wash material off the skin with plenty of soap and water. Get medical attention immediately. Wash contaminated clothing and decontaminate footwear before reuse. **INGESTION:** Give 1 or 2 glasses of water and induce vomiting. Keep victim's head below hips while vomiting to prevent aspiration of liquid into the lungs. Get medical attention immediately. Never give fluids or induce vomiting to an unconscious or convulsive person. **NOTES TO PHYSICIANS:** In treating persons suffering from toxic effects due to fluorocarbon compounds, the use of epinephrine and similar drugs must be avoided because they cause cardiac arrhythmia.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Wear skin, eye, and respiratory protection during cleanup. Soak up material with absorbent and shovel into a chemical waste container. Cover container, but do not seal, and remove from work area. Residues from spill cleanup may continue to be regulated under provisions of RCRA and require storage and disposal as hazardous waste. For major spills, call CHEMTREC (Chemical Transportation Emergency Center) at 800-424-9300.

WASTE DISPOSAL METHOD: Incinerate in a licensed facility. Do not discharge into waterways. Residues may still be subject to RCRA storage and disposal requirements. Dispose off in compliance with all relevant local, state, and federal laws and regulations regarding treatment.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Store in tightly sealed containers to protect from atmospheric moisture. Store in a ventilated cool dry area. Avoid excessive temperatures, low or high. Do not expose this material to open flames.

OTHER PRECAUTIONS: Prevent skin and eye contact, observe TLV limitations. Avoid breathing vapors. Workers should shower and change to fresh clothing after each shift. Individuals with existing respiratory disease such as chronic bronchitis, emphysema, asthma or disease of the central nervous system, should not be exposed. These individuals should be identified through baseline and annual evaluation and removed from further exposure. Medical examination should include medical history, vital capacity, and forced expiratory volume at one second.

SECTION VIII - CONTROL MEASURES

VENTILATION: Use local exhaust ventilation to keep airborne concentrations below the TLV. Follow guidelines in the ACGIH publication "Industrial Ventilation". Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination.

RESPIRATORY PROTECTION: Avoid breathing vapor or mists. If exposure may or does exceed occupational exposure limits (Sec. II). Use a NIOSH approved respirator to prevent overexposure. In accordance with 29 CFR 19010.134. Use either an atmosphere supplying respirator or an air-purifying respirator for organic vapors.

PROTECTIVE CLOTHING: Gloves determined to be impervious under the conditions of use should be worn always when working with this product. Depending on conditions of use, additional protection may be required such as apron, arm covers, or full body suit. Wash contaminated clothing before re-wearing. Protective clothing should be selected and used in accordance with "Guidelines for the Selection of Chemical Protective Clothing" published by ACGIH.

EYE PROTECTION: Chemical tight goggles and full-face shield.

OTHER PROTECTIVE EQUIPMENT AND MEASURES: Unhindered access to safety shower and eye wash stations. As a general hygienic practice, wash hands and face after use. Showers and cleaning of clothes are recommended.

SECTION IX - REGULATORY INFORMATION
--

DOT PROPER SHIPPING NAME: Not regulated.

STATE REGULATIONS: CALIFORNIA - As per requirements of the Safe Drinking Water & Toxic Enforcement Act of CA, USA 1985 (Proposition 65), the public is warned that materials used in this product may create an exposure to chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm. This warning is required by Section 25249.6 of the California Health and Safety Code.

TOXIC SUBSTANCE CONTROL ACT: All chemicals comprising this product are listed on the TSCA inventory.

USER'S RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions, in addition to those described herein, are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

DISCLAIMER: The information contained herein is, to the best of our knowledge and belief, accurate and current as of the date of this MSDS. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: Nukote EP Prime I Side-B-Polymeric MDI

SECTION I - COMPANY IDENTIFICATION

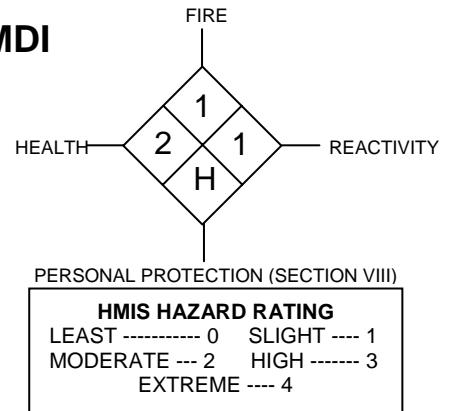
COMPANY NAME: Nukote Coating Systems International

ADDRESS: Suite 7H, Aihe Mansion, No. 629 Lingling Road, Shanghai 200030, China
704 228th Avenue NE, No. 736, Sammamish, WA 98074, USA

INFORMATION PHONE: (China) 021-54249811, (USA) 425-702-1973

EMERGENCY CONTACT: (CHEMTREC): 800-424-9300
Outside USA and Canada, call CHEMTREC collect: 703-527-3887

DATE REVISED: MAY 17, 2005



SECTION II - HAZARDOUS INGREDIENTS/SARA III INFORMATION

HAZARDOUS COMPONENTS	OCCUPATIONAL EXPOSURE LIMITS			VAPOR PRESSURE	
	CAS NUMBER	OSHA PEL	ACGIH TLV	MFG TLV	mm Hg @ TEMP
4,4' DIPHENYLMETHANE DIISOCYANATE	101-68-8	N/E	N/E		
POLYMERIC MDI	9016-87-9	N/E	N/E		
MDI MIXED ISOMERS	26447-40-5	N/E	N/E		

* No toxic chemical(s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372.
Information concerning non-hazardous ingredients is considered a Trade Secret.

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT: 200°C

SPECIFIC GRAVITY: (H₂O=1): N/A

COATING V.O.C.: 10 lb/gal

VAPOR DENSITY: Heavier than air

EVAPORATION RATE:

SOLUBILITY IN WATER: Water reactive

APPEARANCE AND ODOR: dark brown, liquid, mild aromatic odor

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 220°C

METHOD USED: Open Cup

FLAMMABLE LIMITS IN AIR BY VOLUME: Lower: N/E

Upper: N/E

EXTINGUISHING MEDIA: Dry chemical, foam, carbon dioxide, water spray.

SPECIAL FIRE FIGHTING PROCEDURES: Wear NIOSH approved self-contained breathing apparatus in positive pressure mode with full-face piece. Boots, gloves (neoprene), goggles, and full protective clothing are also required. Nitrogen dioxide fumes and isocyanate vapors shall be protected against.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Closed containers may rupture due to very high temperature or induced pressure.

SECTION V - REACTIVITY DATA

STABILITY: Stable under normal conditions in closed containers.

CONDITIONS TO AVOID: Heat, high temperature, open flame, sparks, and moisture. Contact with incompatible materials in a closed system will cause buildup of pressure. Reaction with moisture may form CO₂ which may create excessive pressure in closed containers..

INCOMPATIBILITY (MATERIALS TO AVOID): This product will react with water, alcohols, strong bases or other products which can react with isocyanate. Reacts exothermically with polyol and alcohols and possibly violently with acids, amines and alkaline solutions.

AZARDOUS DECOMPOSITION OR BY-PRODUCTS: CO, NO_x, HCN, MDI vapors, organic vapors and other thermal decomposition products.

HAZARDOUS POLYMERIZATION: May occur.

SECTION VI - HEALTH HAZARD DATA

SKIN CONTACT: Can be corrosive to skin or cause skin sensitization or dermatitis.

EYE CONTACT: Can be corrosive to eyes. Overexposure may result in conjunctiva irritation and mild corneal opacity.

SKIN ABSORPTION: Systemically toxic concentrations of this product will probably not be absorbed through human skin.

INGESTION: Irritation or chemical burns of the mouth, pharynx, esophagus and stomach can develop following ingestion, gastrointestinal discomfort including nausea, vomiting and abdominal pain, and injury may be severe leading to death unless treated promptly.

INHALATION: Vapors can irritate eyes, nose and respiratory passages. Over exposure may induce headaches, dizziness, drowsiness, unconsciousness, breathlessness, chest discomfort. Chronic exposures may result in bronchitis, bronchial spasms and permanent decreases in lung function.

HEALTH HAZARDS: ACUTE: Exposure may cause mucous membrane and respiratory tract irritation, tightness of chest, chemical bronchitis, headache, shortness of breath, a dry cough, reduced pulmonary function. Also may cause hyper-sensitivity pneumonitis, which is characterized by flu-like symptoms. The effects of acute exposure may be delayed in onset up to 12-24 hours. **CHRONIC:** Repeated skin exposure above current occupational limits may cause an allergic sensitization of the respiratory tract. This is characterized by an asthma-like response upon re-exposure to the chemical. The symptoms may include coughing, wheezing, shortness of breath and chest tightness.

CARCINOGENICITY: NTP: No

IARC Monographs: No

OSHA Regulated: No

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Cardiovascular disease, lung diseases, asthma or asthmatic bronchitis, allergic disease, chronic respiratory disease, skin disorders, allergies, sinusitis, headache, dizziness.

EMERGENCY AND FIRST AID PROCEDURES: EYE CONTACT: Immediately flush eyes with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Have eyes examined and treated by medical personnel immediately. **INHALATION:** Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is labored, give oxygen. Consult medical personnel. **SKIN CONTACT:** Wash material off the skin with plenty of soap and water. Get medical attention immediately. Wash contaminated clothing and decontaminate footwear before reuse. **INGESTION:** Do not induce vomiting. Give 3 or 4 glasses of water to drink and refer person to medical personnel. Never give fluids to an unconscious or convulsive person. Get medical attention immediately. **NOTES TO PHYSICIANS:** There is no specific antidote to counteract the effects of MDI.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Evacuate and ventilate spill area. Dike spill to prevent entry into water system. Wear skin, eye, and respiratory protection during cleanup. Soak up material with acceptable absorbent and shovel into a chemical waste container. Cover container, but do not seal, and remove from work area to a well ventilated area and neutralize with a mixture of 90% water, 3-8% ammonia and 2-7% detergent. Add at 10 to 1 ratio. Let stand for 48 hours letting evolved CO₂ escape. Residues from spill cleanup can be carried out by using neutralizing solution and stand for at least 15 minutes, or may continue to be regulated under provisions of RCRA and require storage and disposal as hazardous waste. For major spills, call CHEMTREC (Chemical Transportation Emergency Center) at 800-424-9300.

WASTE DISPOSAL METHOD: Incinerate or landfill in a licensed facility. Do not discharge into waterways. Residues may still be subject to RCRA storage and disposal requirements. Dispose off in compliance with all relevant local, state, and federal laws and regulations regarding treatment.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Store in tightly sealed containers to protect from atmospheric moisture. Store in a cool dry and ventilated area. Contamination by moisture or basic compounds can cause dangerous pressure buildup in closed containers. Do not expose this material to open flames, spark or other sources of ignition. If bulging of drum happens, transfer to ventilated area, puncture to relieve pressure, open vent and let stand for 48 hours before resealing.

OTHER PRECAUTIONS: Prevent skin and eye contact. Observe TLV limitations. Avoid breathing vapors. Workers should shower and change to fresh clothing after each shift. Individuals with existing respiratory disease such as chronic bronchitis, emphysema or asthma should not be exposed. These individuals should be identified through baseline and annual evaluation and removed from further exposure. Medical examination should include medical history, vital capacity, and forced expiratory volume at one second.

SECTION VIII - CONTROL MEASURES

VENTILATION: Use local exhaust ventilation to keep airborne concentrations below the TLV. Follow guidelines in the ACGIH publication "Industrial Ventilation". Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination.

For situations where the airborne concentrations may exceed the level for which an air purifying respirator is effective, or where the levels are unknown or Immediately Dangerous to Life or Health (IDLH), select and use an appropriate positive pressure air supplying respirator (airline or self-contained breathing apparatus). When atmospheric levels may exceed the occupational exposure limit (PEL or TLV) approved air-purifying respirators equipped with an organic vapor sorbent and particulate filter can be used as long as appropriate precautions and change out schedules are in place.

RESPIRATORY PROTECTION: For situations where the concentration in the air may exceed the level for which an air purifying respirator is effective, or where the levels are unknown, select and use an appropriate positive pressure air supplying respirator (airline or self-contained breathing apparatus). In poorly ventilated areas, a cartridge mask NIOSH approved for organic vapors is recommended under the following conditions: emergency situations, during repair and cleaning of equipment, during transfer or discharge of the product.

PROTECTIVE CLOTHING: Gloves determined to be impervious under the conditions of use should be worn always when working with this product. Depending on conditions of use, additional protection may be required such as apron, arm covers, or full body suit. Wash contaminated clothing before re-wearing. Protective clothing should be selected and used in accordance with "Guidelines for the Selection of Chemical Protective Clothing" published by ACGIH.

EYE PROTECTION: Chemical tight goggles and full-face shield.

OTHER PROTECTIVE EQUIPMENT AND MEASURES: Unhindered access to safety shower and eye wash stations. As a general hygienic practice, wash hands and face after showers and cleaning of clothes are recommended.

SECTION IX - REGULATORY INFORMATION

DOT PROPER SHIPPING NAME: Not regulated.

STATE REGULATIONS: CALIFORNIA - As per requirements of the Safe Drinking Water & Toxic Enforcement Act of CA, USA 1985 (Proposition 65), the public is warned that materials used in this product may create an exposure to chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm. This warning required by Section 25249.6 of the California Health and Safety Code.

TOXIC SUBSTANCE CONTROL ACT: All chemicals comprising this product are listed on the TSCA inventory.

USER'S RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions, in addition to those described herein, are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

DISCLAIMER: The information contained herein is, to the best of our knowledge and belief, accurate and current as of the date of this MSDS. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.