



MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS, and European Community Standards

PART I What is the material and what do I need to know in an emergency?

1. PRODUCT IDENTIFICATION

<u>TRADE NAME (AS LABELED):</u>	PARYLENE DIMER DPX-N
<u>CHEMICAL NAME/CLASS:</u>	Para-Xylylene Dimer
<u>PRODUCT USE:</u>	Metal Coating
<u>U.S./MANUFACTURER'S NAME:</u>	SPECIALTY COATING SYSTEMS, INC.
<u>ADDRESS:</u>	7645 Woodland Drive Indianapolis, IN 46278-2707 317/244-1200
<u>BUSINESS PHONE:</u>	
<u>EUROPEAN DISTRIBUTOR'S NAME:</u>	SCS europe
<u>ADDRESS:</u>	23 Monarch Road Northampton, NN2 6EH England 011-44-1-604-715600 011-44-1-604-715483
<u>BUSINESS PHONE:</u>	
<u>FACSIMILE (FAX):</u>	
<u>EMERGENCY NUMBER:</u>	CHEMTREC: 1-800-424-9300 INTERNATIONAL: 1-202-483-7616
<u>DATE OF PREPARATION:</u>	November 12, 1996
<u>DATE OF REVISION:</u>	May 1, 2001

2. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	EINECS #	%w/w	EXPOSURE LIMITS IN AIR					
				ACGIH-TLV		OSHA-PEL		NIOSH IDLH mg/m ³	OTHER mg/m ³
				TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³		
Di-p-Xylylene CAS: Tricyclo(8.2.2.2.4.7)- hexadeca-4,6,10, 12,13,15-hexaene There are no specific exposure limits established for this substance. It is recommended that the following exposure limits for "Particulates, Not Otherwise Classified" be used.	1633-22-3	216-644-2	100%	10 mg/m ³ , (Inhalable Fraction) 3 mg/m ³ , (Respirable Fraction)	NE	15 mppcf or 5 mg/m ³ (Respirable Fraction) 50 mppcf or 15 mg/m ³ (Total Dust)	NE	NE	DFG MAKs: TWA = 4, 1.5 (Respirable Fraction of the Aerosol)

NE = Not Established.

See Section 16 for Definitions of Terms Used.

NOTE: All Canadian WHMIS, and European Community Directive required information is included in appropriate sections based on the ANSI Z400.1-1998 format. This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: This product is a white, crystalline powder which has a characteristic, organic odor. **Health Hazards:** The toxicological properties of this substance have not been fully investigated. It is anticipated that the chief health hazard associated with over-exposures to this product would be irritation of contaminated eyes, skin and mucous membranes. **Flammability Hazards:** This product can present a slight fire hazard; if exposed to extremely high temperatures it will ignite. Thermal decomposition of this product can produce irritating vapors and toxic gases (i.e. carbon monoxide and carbon dioxide). In addition, under certain conditions, during the thermal decomposition of this product, detectable amounts of dioxins and furans and a variety of other substances may be generated. Ensure that the area is well-ventilated and that you are in compliance with all local, state, federal and international regulations. **Reactivity Hazards:** Negligible. **Emergency Recommendations:** Emergency responders must wear personal protective equipment suitable for the situation to which they are responding.

SYMPTOMS OF OVEREXPOSURE BY ROUTE OF EXPOSURE: The most significant routes of occupational overexposure are inhalation of dusts and contact with skin and eyes. The anticipated symptoms of overexposure to this product, via route of exposure, are indicated below.

INHALATION: Inhalation of dusts or particulates of this product may be irritating to the nose, throat, and other tissues of the respiratory system. Symptoms of such over-exposure may include sneezing, coughing, and sore throat.

CONTACT WITH SKIN or EYES: Skin contact (especially after prolonged overexposure) can cause mild to moderate irritation. Prolonged or repeated skin overexposures can cause dermatitis (dry red skin). Eye contact with dust or particulates of this product may cause irritation, reddening, and pain.

SKIN ABSORPTION: This product is not known to be absorbed through intact skin.



INGESTION: Ingestion is not anticipated to be a significant route of over-exposure to this product. In the event this product is swallowed, irritation of the mouth, throat, esophagus, and other tissues of the digestive system may occur upon contact. Ingestion of large quantities of this product may result in stomach-ache, nausea, vomiting, and other gastric disorders.

INJECTION: Injection is not anticipated to be a significant route of overexposure for this product. Injection of this product (via puncture with a contaminated object) can cause pain and irritation, in addition to the wound.

ACUTE: Overexposures to this product can mildly to moderately irritate contaminated skin, eyes, and mucous membranes.

CHRONIC: Prolonged or repeated skin exposures can cause dermatitis (dry, red skin).

TARGET ORGANS: ACUTE: Respiratory system, skin, eyes. CHRONIC: Skin.

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM			
HEALTH	(BLUE)	1	
FLAMMABILITY	(RED)	1	
REACTIVITY	(YELLOW)	0	
PROTECTIVE EQUIPMENT			C
EYES	RESPIRATORY	HANDS	BODY
	SEE SECTION 8		SEE SECTION 8

See Section 16 for Definition of Ratings

PART II *What should I do if a hazardous situation occurs?*

4. FIRST-AID MEASURES

Victims should be taken for medical attention if they feel unwell or if adverse effects occur. Take copy of label and MSDS to physician or health professional with victim.

SKIN EXPOSURE: If this material contaminates the skin, begin decontamination with running water. Recommended flushing is for 15 minutes if any sign of skin irritation develops. Victim should seek immediate medical attention if any adverse exposure symptoms develop.

EYE EXPOSURE: If this product enters the eyes, open victim's eyes while under gently running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 15 minutes. Do not interrupt flushing. Victim must seek medical attention.

4. FIRST-AID MEASURES (Continued)

INHALATION: If dusts or particulates of this product are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Remove or cover gross contamination to avoid exposure to rescuers.

INGESTION: If this material is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. DO NOT INDUCE VOMITING. Have victim rinse mouth thoroughly with water, if conscious. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing dermatitis, other skin conditions, eye disorders, respiratory conditions such as asthma or emphysema may be aggravated by over-exposure to this product.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and eliminate exposure.

5. FIRE-FIGHTING MEASURES

FLASH POINT: Not applicable.

AUTOIGNITION TEMPERATURE: Not determined.

FLAMMABLE LIMITS (in air by volume, %):

Lower: Not applicable.

Upper: Not applicable.

FIRE EXTINGUISHING MATERIALS: Use extinguishing material suitable to the surrounding fire.

Water Spray: YES (for cooling)

Foam: YES

Halon: YES

Carbon Dioxide: YES

Dry Chemical: YES

Other: Any "ABC" Class

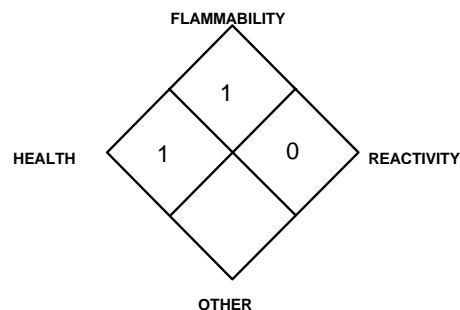
UNUSUAL FIRE AND EXPLOSION HAZARDS: This product poses a slight fire hazard at elevated temperatures. When involved in a fire, this material may decompose and produce irritating vapors, acrid smoke, and toxic gases(carbon dioxide, carbon monoxide, hydrogen chloride).

Explosion Sensitivity to Mechanical Impact: Not applicable.

Explosion Sensitivity to Static Discharge: Not applicable.

SPECIAL FIRE-FIGHTING PROCEDURES: Incipient fire responders should wear eye protection. Structural fire fighters must wear Self-Contained Breathing Apparatus and full protective equipment. Chemical resistant clothing may be necessary. If this product is involved in a fire, fire runoff water should be contained to prevent possible environmental damage.

NFPA RATING



**See Section 16 for
Definition of Ratings**

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Small releases can be swept-up or cleaned-up using a damp sponge or polypads, avoiding generation of dusts. Responders should wear gloves, goggles, and suitable body protection during the clean-up of small spills. Larger, uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a large spill (e.g. > 100 kg), clear the affected area, protect people, and respond with trained personnel. Minimum Personal Protective Equipment should be Level C: triple-gloves (rubber gloves and nitrile gloves, over latex gloves), chemically resistant suit and boots, hard-hat, and Air-Purifying respirator with high efficiency particulate filter). Self-Contained Breathing Apparatus must be selected if releases occur in confined or poorly-ventilated areas, or in situations in which the level of oxygen is below 19.5%. Sweep-up or vacuum spilled solid. Rinse area with soap and water solution, followed by a water rinse. Place all spill residue in an appropriate container and seal. Dispose of in accordance with Federal, State, and local hazardous waste disposal regulations (see Section 13, Disposal Considerations).

PART III *How can I prevent hazardous situations from occurring?*

7. HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting this product ON YOU or IN YOU. All employees who handle this material should be trained to handle it safely. Wash thoroughly after using this material. Do not eat, smoke, apply cosmetics, or drink while handling this material. Avoid breathing the dusts generated by this material. All work practices should minimize the release of this material. Use in a well-ventilated location. Wipe-down area routinely to avoid the accumulation of dusts. Remove contaminated clothing immediately.

STORAGE AND HANDLING PRACTICES: All employees who handle this material should be trained to handle it safely. Minimize all exposures to this substance. Open containers slowly on a stable surface. Containers of this product must be properly labeled. Empty containers may contain residual amounts of this product; therefore, empty containers should be handled with care. Store containers in a cool, dry location, away from direct sunlight, or sources of intense heat. Store away from incompatible materials (see Section 10, Stability and Reactivity). Keep container tightly closed when not in use. Inspect all incoming containers before storage to ensure containers are properly labeled and not damaged. Care should be taken to avoid the accumulation of dusts.

7. HANDLING and STORAGE (Continued)

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely. Collect all rinsates and dispose of according to applicable U.S. Federal, State, or local procedures or appropriate standards of Canada or EC Member States.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation. Use a mechanical fan or vent area to outside. In areas where use of this product may produce excessive dusts or particulates, the installation of eyewash stations should be considered.

INTERNATIONAL OCCUPATIONAL EXPOSURE LIMITS: Currently, there are no international occupational exposure limits for the components of this product.

RESPIRATORY PROTECTION: Maintain airborne contaminant concentrations below guidelines listed in Section 2 (Composition and Information on Ingredients) if applicable. If use of this product results in the generation of excessive dusts or particulates, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134) or equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, and the European Standard EN149 and EC member states. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998).

EYE PROTECTION: Splash goggles or safety glasses should be worn if use of product generates excessive dust or particulates. If necessary, refer to U.S. OSHA 29 CFR 1910.133, Canadian Standards, or the European Standard EN166.

HAND PROTECTION: Nitrile rubber, Viton™, Saranex™, 4H™, Barricade™, or Responder™ gloves. If necessary, refer to U.S. OSHA 29 CFR 1910.138, appropriate Standards of Canada, or appropriate Standards of the European Economic Community.

BODY PROTECTION: Use body protection appropriate for task. Full-body chemical protective clothing is recommended for response to any chemical emergency. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA 29 CFR 1910.136.

9. PHYSICAL and CHEMICAL PROPERTIES

VAPOR DENSITY (air = 1): Not applicable.

SPECIFIC GRAVITY (water = 1): Not determined.

SOLUBILITY IN WATER: Insoluble.

VAPOR PRESSURE: Not applicable.

ODOR THRESHOLD: Not determined.

COEFFICIENT OF OIL/WATER DISTRIBUTION (PARTITION COEFFICIENT): Not applicable.

APPEARANCE AND COLOR: This product is a white, crystalline powder which has a characteristic, organic odor

HOW TO DETECT THIS SUBSTANCE (warning properties): The appearance of this product may act as a distinguishing characteristic of this product if accidentally released.

EVAPORATION RATE (nBuAc = 1): Not applicable.

MELTING/FREEZING POINT: 285°C (545°F)

BOILING POINT: Not applicable.

pH: Not applicable.

BULK DENSITY: 39.09 lb/ft³ (0.63 g/cc)

10. STABILITY and REACTIVITY

STABILITY: Stable.

DECOMPOSITION PRODUCTS: Thermal decomposition of this product can produce irritating vapors and toxic gases (i.e. carbon monoxide and carbon dioxide). In addition, under certain conditions, during the thermal decomposition of this product, detectable amounts of dioxins and furans and a variety of other substances may be generated. Ensure that the area is well-ventilated and that you are in compliance with all local, state, federal and international regulations.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: This product will react with strong oxidizing agents, strong acids and strong bases.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Contact with or exposure to incompatible chemicals, elevated temperatures, sparks, flames.

PART IV *Is there any other useful information about this material?*

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: Currently, there are no toxicology data available for this product.

SUSPECTED CANCER AGENT: This product is not found on the following lists: FEDERAL OSHA Z LIST, NTP, IARC, and CAL/OSHA, and therefore are neither considered to be nor suspected to be cancer-causing agents by these agencies.

IRRITANCY OF PRODUCT: This product can be irritating to contaminated tissue.

11. TOXICOLOGICAL INFORMATION (Continued)

SENSITIZATION TO THE PRODUCT: This product is not known to be a skin or respiratory sensitizer.

REPRODUCTIVE TOXICITY INFORMATION: The reproductive effects of this product on the human reproductive system have not been thoroughly investigated and currently, there are no data this material.

Mutagenicity: This product is not expected to produce mutagenic effects in humans.

Embryotoxicity: This product is not expected to produce embryotoxic effects in humans.

Teratogenicity: This product is not expected to produce teratogenic effects in humans.

Reproductive Toxicity: This product is not expected to produce reproductive effects in humans.

A *mutagen* is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An *embryotoxin* is a chemical which causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A *teratogen* is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A *reproductive toxin* is any substance which interferes in any way with the reproductive process.

SYNERGISTIC PRODUCTS: Currently, there is no information on synergistic properties for this product.

BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, there are no Biological Exposure Indices (BEIs) determined for this product.

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

ENVIRONMENTAL STABILITY: This product will degrade slowly under ambient environmental conditions.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: This product may be harmful to contaminated plant and animal-life if large quantities are released.

EFFECT OF CHEMICAL ON AQUATIC LIFE: This product may be harmful to contaminated aquatic plant and animal life if large quantities are released. Currently, there are no aquatic toxicity data available for the components of this product.

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate U.S. Federal, State, and local regulations or with regulations of Canada or EC Member States. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local waste regulatory authority. Empty containers, as defined by appropriate sections of RCRA, are not RCRA hazardous wastes. Insure proper management of any residuals remaining in containers.

EPA WASTE NUMBER: Not applicable.

14. TRANSPORTATION INFORMATION

THIS MATERIAL IS NOT HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME: Not Applicable

HAZARD CLASS NUMBER and DESCRIPTION: Not Applicable

UN IDENTIFICATION NUMBER: Not Applicable

DOT LABEL(S) REQUIRED: Not Applicable

PACKAGING GROUP: Not Applicable

NORTH AMERICAN RESPONSE GUIDEBOOK NUMBER (2000): Not Applicable

MARINE POLLUTANT: The components of this product are not listed as marine pollutants as per D.O.T. (49 CFR 172.101, Appendix B).

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This material is not considered as dangerous goods, per regulations of Transport Canada.

INTERNATIONAL AIR TRANSPORTATION ASSOCIATION DESIGNATION: This material is not considered as dangerous goods by the International Air Transport Association (IATA).

INTERNATIONAL MARITIME ORGANIZATION DESIGNATION: This material is not considered as dangerous goods by the International Maritime Association (IMO).

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR): This material is not considered to be dangerous goods by the United Nations Economic Commission for Europe.

15. REGULATORY INFORMATION

U.S. STATE AND FEDERAL REGULATIONS:

U.S. SARA REPORTING REQUIREMENTS: This product is not subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

15. REGULATORY INFORMATION (Continued)

U.S. STATE AND FEDERAL REGULATIONS (continued):

U.S. SARA THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for this material. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA REPORTABLE QUANTITY (RQ): Not applicable.

U.S. TSCA INVENTORY STATUS: This compound is included in the TSCA Inventory.

OTHER U.S. FEDERAL REGULATIONS: Not applicable.

U.S. STATE REGULATORY INFORMATION: This compound not covered under specific State regulations, as denoted below:

Alaska - Designated Toxic and Hazardous Substances: None.

California - Permissible Exposure Limits for Chemical Contaminants: None.

Florida - Substance List: None.

Illinois - Toxic Substance List: None.

Kansas - Section 302/313 List: None.

Massachusetts - Substance List: None.

Michigan - Critical Materials Register: None.

Minnesota - List of Hazardous Substances: None.

Missouri - Employer Information/Toxic Substance List: None.

New Jersey - Right to Know Hazardous Substance List: None.

North Dakota - List of Hazardous Chemicals, Reportable Quantities: None.

Pennsylvania - Hazardous Substance List: None.

Rhode Island - Hazardous Substance: None.

Texas - Hazardous Substance List: None.

West Virginia - Hazardous Substance List: None.

Wisconsin - Toxic and Hazardous Substances: None.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): This compound is not on the California Proposition 65 lists.

U.S. ANSI STANDARD LABELING (Z129.1): **CAUTION! MAY CAUSE SKIN AND EYE IRRITATION FOR INDUSTRIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN.** Avoid contact with skin, eyes, or clothing. Wash after handling. Avoid breathing dusts or particulates. Do not taste or swallow. Avoid generation of dusts. Wear gloves, goggles, and appropriate body protection. **FIRST-AID:** In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. If inhaled, remove to fresh air. If ingested, do not induce vomiting. Get medical attention. **IN CASE OF FIRE:** Use water fog, dry chemical, CO₂, or "alcohol" foam. **IN CASE OF SPILL:** Vacuum or sweep-up spilled material and place residue in suitable container. Consult Material Safety Data Sheet for additional information.

ADDITIONAL CANADIAN REGULATIONS:

CANADIAN DSL INVENTORY: This compound is listed on the DSL Inventory.

CANADIAN WHMIS IDL DISCLOSURE STATUS: This compound is not required to be listed for disclosure at 1% or greater.

OTHER CANADIAN REGULATIONS: Not applicable.

CANADIAN ENVIRONMENTAL PROTECTION AGENCY (CEPA) PRIORITY SUBSTANCES LISTS: This compound is not on the Priority Substances Lists.

CANADIAN WHMIS SYMBOLS: Not applicable.

EUROPEAN COMMUNITY INFORMATION FOR PRODUCT:

EC LABELING AND CLASSIFICATION: This product does not meet the definition of a hazardous material, as defined by the European Community Council Directive 67/548/EEC.

EC CLASSIFICATION: Not applicable.

EC RISK PHRASES: Not applicable.

EC SAFETY PHRASES: Not applicable.

EUROPEAN COMMUNITY ANNEX II HAZARD SYMBOLS: Not applicable.

DANISH INFORMATION FOR PRODUCT:

NEUROTOXIC SUBSTANCES IN THE WORKING ENVIRONMENT: This compound is not listed as a Neurotoxic Substance in the Working Environment in Denmark.

DUTCH INFORMATION FOR THE PRODUCT:

LIST OF PRIORITY SUBSTANCES: This compound is not listed as substance hazardous in the environment under VROM 93292/7-93, by the Hague, Ministry of Housing and Physical Planning and the Environment.

GERMAN INFORMATION FOR THE PRODUCT:

AQUATIC HAZARD CLASS (WGK):

WGK Rating: 1 (self-rated)

TECHNICAL INSTRUCTION ON AIR QUALITY CONTROL (TALuft): This compound does not have a specific TALuft Classification.

15. REGULATORY INFORMATION (Continued)

NORWEGIAN INFORMATION FOR PRODUCT:

ENVIRONMENTAL POLLUTANTS: This compound is not listed as Environmental Pollutants by the State Pollution Control Authority in Norway.

SWEDISH INFORMATION FOR THE PRODUCT:

SWEDISH NATIONAL CHEMICALS INSPECTORATE'S LIST OF CARCINOGENIC SUBSTANCES: This compound is not on the National Chemicals Inspectorate's List Of Carcinogenic Substances.

SWEDISH NATIONAL CHEMICALS INSPECTORATE'S ESTHER MANUAL: This compound is not an ESTHER Substances.

SWEDISH HIGH VOLUME CHEMICALS: This compound is not on the list of Swedish High Volume Chemicals. This is the list of 1000 products that are of the highest volume produced or imported into Sweden.

OTHER SWEDISH REGULATIONS: This compound is not on the Swedish list of Environmentally Hazardous Chemicals.

16. OTHER INFORMATION

PREPARED BY:

CHEMICAL SAFETY ASSOCIATES, Inc.
9163 Chesapeake Drive, San Diego, CA 92123-1002
(858) 565-0302

DATE OF PRINTING:

March 10, 2005

<p>The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. Specialty Coating Systems, Inc. assumes no responsibility for injury to the vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, Specialty Coating Systems, Inc. assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in his use of the material.</p>

DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on a MSDS. Some of these which are commonly used include the following:

CAS #: This is the Chemical Abstract Service Number which uniquely identifies each constituent.

EXPOSURE LIMITS IN AIR:

ACGIH - American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits.

TLV - Threshold Limit Value - an airborne concentration of a substance which represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour Time Weighted Average (**TWA**), the 15-minute Short Term Exposure Limit, and the instantaneous Ceiling Level (**C**). Skin absorption effects must also be considered.

OSHA - U.S. Occupational Safety and Health Administration.

PEL - Permissible Exposure Limit - This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL which was vacated by Court Order.

IDLH - Immediately Dangerous to Life and Health - This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury. **The DFG - MAK** is the Republic of Germany's Maximum Exposure Level, similar to the U.S. PEL.

NIOSH is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. Occupational Safety and Health Administration (**OSHA**). NIOSH issues exposure guidelines called Recommended Exposure Levels (**RELs**). When no exposure guidelines are established, an entry of **NE** is made for reference.

HAZARD RATINGS:

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM: This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards.

Health Hazard: **0** (minimal acute or chronic exposure hazard); **1** (slight acute or chronic exposure hazard); **2** (moderate acute or significant chronic exposure hazard); **3** (severe acute exposure hazard; onetime overexposure can result in permanent injury and may be fatal); **4** (extreme acute exposure hazard; onetime overexposure can be fatal). **Flammability Hazard:** **0** (minimal hazard); **1** (materials that require substantial pre-heating before burning); **2** (combustible liquid or solids; liquids with a flash point of 38-93°C [100-200°F]); **3** (Class IB and IC flammable liquids with flash points below 38°C [100°F]); **4** (Class IA flammable liquids with flash points below 23°C [73°F] and boiling points below 38°C [100°F]). **Reactivity Hazard:** **0** (normally stable); **1** (material that can become unstable at elevated temperatures or which can react slightly with water); **2** (materials that are unstable but do not detonate or which can react violently with water); **3** (materials that can detonate when initiated or which can react explosively with water); **4** (materials that can detonate at normal temperatures or pressures). PPE Rating B: Hand and eye protection is required for routine chemical use.

NATIONAL FIRE PROTECTION ASSOCIATION: **Health Hazard:** **0** (material that on exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials); **1** (materials that on exposure under fire conditions could cause irritation or minor residual injury); **2** (materials that on intense or continued exposure under fire conditions could cause temporary incapacitation or possible residual injury); **3** (materials that can on short exposure could cause serious temporary or residual injury); **4** (materials that under very short exposure could cause death or major residual injury). **Flammability Hazard and Reactivity Hazard:** Refer to definitions for "Hazardous Materials Identification System".

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (**NFPA**). **Flash Point** - Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. **Autoignition Temperature:** The minimum temperature required to initiate combustion in air with no other source of ignition. **LEL** - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. **UEL** - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

TOXICOLOGICAL INFORMATION:

Human and Animal Toxicology: Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: **LD₅₀** - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; **LC₅₀** - Lethal Concentration (gases) which kills 50% of the exposed animals; **ppm** concentration expressed in parts of material per million parts of air or water; **mg/m³** concentration expressed in weight of substance per volume of air; **mg/kg** quantity of material, by weight, administered to a test subject, based on their body weight in kg. Other measures of toxicity include **TDLo**, the lowest dose to cause a symptom and **TCLo** the lowest concentration to cause a symptom; **TDo**, **LDLo**, and **LDo**, or **TC**, **TCo**, **LCLo**, and **LCo**, the lowest dose (or concentration) to cause lethal or toxic effects. **Cancer Information:** The sources are: **IARC** - the International Agency for Research on Cancer; **NTP** - the National Toxicology Program, **RTECS** - the Registry of Toxic Effects of Chemical Substances, **OSHA** and **CAL/OSHA**. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. **Other Information:** **BEI** - ACGIH Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV. **Ecological Information:** **EC** is the effect concentration in water. **BCF** = Bioconcentration Factor, which is used to determine if a substance will concentrate in lifeforms which consume contaminated plant or animal matter. **TL_m** = median threshold limit; Coefficient of Oil/Water Distribution is represented by **log K_{ow}** or **log K_{oc}** and is used to assess a substance's behavior in the environment.

REGULATORY INFORMATION:

U.S. and CANADA: This section explains the impact of various laws and regulations on the material. **EPA** is the U.S. Environmental Protection Agency. **WHMIS** is the Canadian Workplace Hazardous Materials Information System. **DOT** and **TC** are the U.S. Department of Transportation and the Transport Canada, respectively. Superfund Amendments and Reauthorization Act (**SARA**); the Canadian Domestic/Non-Domestic Substances List (**DSL/NDL**); the U.S. Toxic Substance Control Act (**TSCA**); Marine Pollutant status according to the **DOT**; the Comprehensive Environmental Response, Compensation, and Liability Act (**CERCLA** or **Superfund**); and various state regulations. This section also includes information on the precautionary warnings which appear on the material's package label.

EUROPEAN and INTERNATIONAL: **EC** is the European Community (formerly known as the **EEC**, European Economic Community). **EINECS:** This the European Inventory of Now-Existing Chemical Substances. **IMO** is the International Maritime Organization and **IATA** is the International Air Transport Association. The **ARD** is the European Agreement Concerning the International Carriage of Dangerous Goods by Road and the **RID** are the International Regulations Concerning the Carriage of Dangerous Goods by Rail.