CROSSFIELD PRODUCTS CORPORATION

www.crossfieldproducts.com

3000 E. Harcourt St.
Rancho Dominguez, CA 90221 (Headquarters)
(310)-886-9100 (8:00 AM – 5:00 PM Pacific Time)

140 Valley Rd.
Roselle Park, NJ 07204
(908)-245-2800 (8:00 AM – 5:00 PM Eastern Time)

SAFETY DATA SHEET

1. PRODUCT IDENTIFICATION

TRADE NAME (AS LABELED):	**Electro-flor Conductive, Part B**
CHEMICAL NAME/CLASS:	Waterborne Curing Agent
PRODUCT USE:	Specialty Resin ESD Floors
SUPPLIER/MANUFACTURER'S NAME:	Crossfield Products Corp.
ADDRESS: (West Coast):	3000 E. Harcourt St. Rancho Dominguez, CA 90221 (Headquarters)
ADDRESS: (East Coast):	140 Valley Rd. Roselle Park, NJ 07204
EMERGENCY PHONE:	**CHEMTREC**: 800-424-9300
DATE OF PREPARATION:	March 23, 2021
REVISION DATE:	First Issue

2. HAZARD(S) IDENTIFICATION

GHS Classification:
- Skin Corrosion – Category 1B
- Serious Eye Damage / Eye Irritation – Category 1
- Skin Sensitizer - Category 1
- Specific target organ systemic toxicity- repeated exposure Category 1 Inhalation, lungs

Signal Word: (Danger)

Hazard Statements:
H314: Causes sever skin burns and eye irritation
H317: May cause an allergic skin reaction

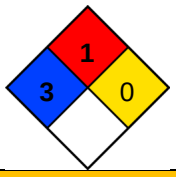
Precautionary Statements:
P261: Avoid breathing dust/fume/gas/mist/vapors/spray
P264: Wash face, hands and any exposed skin thoroughly after handling.
P272: Contaminated work clothing should not be allowed out of the workplace
P273: Avoid release to the environment
P280: Wear protective gloves/protective clothing/eye protection/face protection
P301+P330+P331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353: IF ON SKIN (or hair): take off immediately all contaminated clothing. Rinse skin with water (or shower)
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338+P310: IF IN EYES: Rinse cautiously with water for several minutes, Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor
P337+P313: If eye irritation persists: Get medical advice/attention:
P333+P313: If skin irritation or rash occurs: Get Medical advice/attention.
P362: Take of all contaminated clothing and wash it before reuse.
P501: Dispose of contents and container in accordance with all local, regional, national and international regulations.

HMIS-RATINGS (SCALE 0 – 4)

HEALTH	3
FLAMMABILITY	1
REACTIVITY	0

Health = 3
Fire = 1
Reactivity = 1

NFPA RATING



3. COMPOSITION / INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	% w/w	EXPOSURE LIMITS IN AIR					
			ACGIH		OSHA			
			TLV mg/m^3	STEL mg/m^3	PEL mg/m^3	STEL mg/m^3	IDLH mg/m^3	OTHER mg/m^3
Isophoronediamine	2855-13-2	< 5	ND	ND	ND	ND	ND	ND
Tin antimony grey cassiterite*	68187-54-2	10 - 30	NE	NE	NE	NE	NE	NE
Mica*	12001-26-2	10 - 30	8 hr TWA 3 mg/m^3	NE	8hr TWA 3 mg/m^3	NE	NE	NIOSH REL 10 hr TWA 3 mg/m^3
Silica Quartz*	14808-60-7	10 - 30	8 hr TWA 0.05 mg/m^3		8hr TWA 0.1 mg/m^3			NIOSH REL 10 hr TWA 0.05 mg/m^3
Iron Oxide (Red)	1309-37-1	0 - 5	TWA 5 mg/m^3	NE	TWA Total Dust 15 mg/m^3	NE	ND	OSHA TWA Resp. Dust 5 mg/m^3
Iron Oxide (Yellow)	51274-00-1	0 - 5	TWA 5 mg/m^3	NE	10	NE	ND	
Carbon Black	1333-86-4	0 - 5	TWA 3.5 mg/m^3	NE	TWA 3.5 mg/m^3	NE	ND	
Titanium Dioxide*	13463-67-7	0 - 5	10	NE	TWA 10	NE	ND	
Water and other ingredients. The other ingredients are each present in less than 1 percent concentration in this product.		Balance	The components present in the balance of this product do not contribute any significant, additional hazards. All hazard information pertinent to this product has been presented in the remaining sections of this Material Safety Data Sheet, per the requirements of Federal Occupational Safety and Health Hazard Communication Standard (29 CFR 1910.1200).					
VOC (As applied - part of a multi-component system) < 100 grams/liter								

***Exposure limits are only meaningful when hardened product is abraded, ground, etc.**
NE = Not Established. C = Ceiling Limit. See Section 16 for Definitions of Terms Used.
NOTE: All WHMIS required information is included. It is located in appropriate sections based on the ANSI Z400.1-1993 format.

4. FIRST-AID MEASURES

SKIN CONTACT: Wash immediately with plenty of water and soap. Remove contaminated clothing and shoes without delay. Obtain medical attention. Do not reuse contaminated clothing without laundering. Destroy or thoroughly clean shoes before reuse.

EYE CONTACT: Rinse immediately with plenty of water for at least 15 minutes. Obtain medical advice if there are persistent symptoms.

INHALATION: Remove to fresh air. If breathing is difficult , give oxygen. Obtain medical advice if there are persistent symptoms.

INGESTION: If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

MOST IMPORTANT SYMPTOM AND EFFECTS, BOTH ACUTE AND DELAYED

Cough, shortness of breath, Pneumokoniosis (silicosis)

INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIQL TREATMENT NEEDS

No information available

5. FIRE-FIGHTING MEASURES

FLASH POINT, °C (method): >102°C (215°F) Closed Cup
AUTOIGNITION TEMPERATURE, °C: NE
FLAMMABLE LIMITS (in air by volume, %):

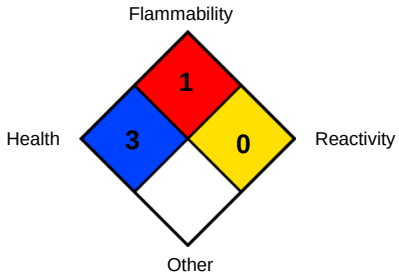
Lower (LEL): NE
Upper (UEL): NE

FIRE EXTINGUISHING MATERIALS:

Water Spray: YES
Foam: YES
Halon: YES

Carbon Dioxide: YES
Dry Chemical: YES
Other: Any "ABC" Class.

NFPA RATING



UNUSUAL FIRE AND EXPLOSION HAZARDS: Run-off from fire control may cause pollution. Keep fire-exposed containers cool with water spray to prevent rupture due to excessive heat. High pressure water hose may spread product from broken containers increasing contamination. If involved in a fire, this product may decompose to produce a variety of compounds (i.e. carbon monoxide, carbon dioxide, and other compounds). Emergency responders must wear the proper personal protective equipment suitable for the situation to which they are responding. Products of combustion are irritating to the respiratory tract and may cause breathing difficulty. Symptoms may be delayed several hours or longer depending upon the extent of exposure.

Explosion Sensitivity to Mechanical Impact: Not sensitive.
Explosion Sensitivity to Static Discharge: Not sensitive.

SPECIAL FIRE-FIGHTING PROCEDURES: Incipient fire responders should wear eye protection. Structural fire fighters must wear Self-Contained Breathing Apparatus and full protective equipment. Move fire-exposed containers, if it can be done without risk to firefighters. If possible, prevent run-off water from entering storm drains, bodies of water, or other environmentally sensitive areas. If necessary, discard or decontaminate fire response equipment before returning such equipment to service.

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a spill, clear the affected area, protect people, and respond with trained personnel.

The proper personal protective equipment for incidental releases (e.g.-1 L of the product released in a well-ventilated area) use impermeable gloves, specific for the material handled, goggles, face shield, and appropriate body protection. In the event of a large release, use impermeable gloves, specific for the material handled, chemically resistant suit and boots, and hard-hat. Self Contained Breathing Apparatus or respirator may be required where engineering controls are not adequate or conditions for potential exposure exist. When respirators are required, Select NIOSH/MSHA approved based on actual or potential airborne concentrations in accordance with latest OSHA and/or ANSI recommendations. Absorb spilled liquid with polypads or other suitable absorbent materials. Neutralize residue with sodium bicarbonate and water rinse. Decontaminate the area thoroughly. Test area with litmus paper to confirm neutralization. Place all spill residue in a suitable container. Dispose of in accordance with Federal, State, and local hazardous waste disposal regulations (see Section 13, Disposal Considerations).

7. HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash hands after handling this product. Do not eat or drink while handling this material. Remove contaminated clothing immediately. Discard contaminated clothing items, or launder before re-use. Inform anyone handling such contaminated laundry of the hazards associated with this product. Use ventilation and other engineering controls to minimize potential exposure to this product.

STORAGE AND HANDLING PRACTICES: All employees who handle this material should be trained to handle it safely. Avoid breathing mists or sprays generated by this product. Use in a well-ventilated location. **Keep from freezing.**

For Non-Bulk Containers: Open containers slowly, on a stable surface. Containers of this product must be properly labeled. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Material should be stored in secondary containers, or in a diked area, as appropriate. Store containers away from incompatible chemicals. Keep container tightly closed when not in use. Wash thoroughly after using this material. Storage areas should be made of fire-resistant materials. If appropriate, post warning signs in storage and use areas. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Empty containers may contain residual liquid, therefore, empty containers should be handled with care.

Bulk Containers: All tanks and pipelines which contain this material must be labeled. Perform routine maintenance on tanks or pipelines which contain this product. Report all leaks immediately to the proper personnel.

Tank Car Shipments: Tank cars carrying this product should be loaded and unloaded in strict accordance with tank-car manufacturer's recommendation and all established on-site safety procedures. Appropriate personal protective equipment must be used (see Section 8, Engineering Controls and Personal Protective Equipment.). All loading and unloading equipment must be inspected, prior to each use. Loading and unloading operations must be attended, at all times. Tank cars must be grounded, level, brakes must be set or wheels must be locked or blocked prior to loading or unloading. Tank car (for loading) or storage tank (for unloading) must be verified to be correct for receiving this product and be properly prepared, prior to starting the transfer operations. Hoses must be verified to be clean and free of incompatible chemicals, prior to connection to the tank car or vessel. Valves and hoses must be verified to be in the correct positions, before starting transfer operations. A sample (if required) must be taken and verified (if required) prior to starting transfer operations. All lines must be blown-down and purged before disconnecting them from the tank car or vessel.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain application equipment is locked and tagged-out safely. Always use this product in areas where adequate ventilation is provided. Decontaminate equipment before maintenance begins by a triple-rinse with water followed, if necessary, by using sodium bicarbonate and an additional rinse. Collect all rinsates and dispose of according to applicable Federal, State, or local procedures.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: If required use a corrosion-resistant ventilation system separate from other exhaust ventilation systems to ensure that there is no potential for overexposure to sprays, or mists of this product and that exposures are below those in section 2 (Composition and Information on Ingredients). Ensure eyewash/safety shower stations are available near areas where this product is used.

RESPIRATORY PROTECTION: Maintain airborne contaminant concentrations below exposure limits listed in Section 2 (Composition and Information on Ingredients). If respiratory protection is needed, use only protection authorized in 29 CFR 1910.134, or applicable State regulations. If adequate ventilation is not available or if there is potential for airborne exposure above the exposure limits (listed in Section 2) a respirator may be worn up to respirator exposure limitations, check with respirator equipment manufactures recommendations/limitations. For a higher level of protection use positive pressure supplied air respiration protection or Self Contained Breathing Apparatus or if oxygen levels are below 19.5% or are unknown.

EMERGENCY OR PLANNED ENTRY INTO UNKNOWN CONCENTRATIONS OR IDLH CONDITIONS:
Positive pressure, full-facepiece Self Contained Breathing Apparatus; or positive pressure, full-facepiece Self Contained Breathing Apparatus with an auxiliary positive pressure Self Contained Breathing

ApparatusEYE PROTECTION: Splash goggles or safety glasses. Face-shields are recommended when the operation can generate splashes, sprays or mists.

HAND PROTECTION: Wear appropriate gloves for routine industrial use. Use appropriate gloves for spill response, as stated in Section 6 of this SDS (Accidental Release Measures).

BODY PROTECTION: Use body protection appropriate for task. Cover-all, rubber aprons, or chemical protective clothing made from natural rubber are generally acceptable, depending upon the task.

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For Routine Industrial Applications

Safety Glasses

Safety Gloves

Synthetic Apron

9. PHYSICAL and CHEMICAL PROPERTIES

RELATIVE VAPOR DENSITY (air = 1): > ND
SPECIFIC GRAVITY (water = 1): 1.34
SOLUBILITY IN WATER: Dispersable
VAPOR PRESSURE, mm Hg @ 20 °C: ND
ODOR : Amine
LOG WATER/OIL DISTRIBUTION COEFFICIENT: Not available.

EVAPORATION RATE (n-BuAc=1): ND
MELTING/FREEZING POINT: Not established.
BOILING POINT: > 100 ºC (212 ºF
pH: ~12

APPEARANCE AND COLOR: Pigmented Liquid.
HOW TO DETECT THIS SUBSTANCE (warning properties): ND

10. STABILITY and REACTIVITY

STABILITY: Stable. Under normal conditions

DECOMPOSITION PRODUCTS: Nitric acid, Ammonia, Nitrogen Oxides. Nitrogen oxide can react with water vapors to form corrosive nitric acid. Carbon Monoxide, Carbon Dioxide

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Organic acids (i.e. acetic acid, citric acid etc.). Mineral Acid, Sodium hypochlorite. Product slowly corrodes copper, aluminum

HAZARDOUS POLYMERIZATION: Will not occur by itself.

CONDITIONS TO AVOID: No data available

11. TOXICALOGICAL INFORMATION

TOXICITY DATA: Additional toxicology information for components greater than 1 percent in concentration is provided below.

Isophoronediamine: (2855-13-2)

Acute Oral Toxicity:	LD50: 1,030 mg/kg	(Species – Male Rat) OECD Test Guideline 401
Acute Inhalation:	LC50: >5.01 mg/l (4 h)	(Species – Male & Female Rate) OECD Test guideline 403
Acute Dermal:	LD50: >2,000 mg/kg	(Species – Male & Female Rate) OECD Test guideline 402
Skin corrosion/irritation:	Causes burns – 24h	(Species – Rabbit)
Serious eye damage/eye irritation	Corrosive – 24 h	(Species – Rabbit) OECD Test Guideline 405
Respiratory or skin sensitization	May cause sensitization by skin contact Maximization Test (GPMT)	(Species – guinea pig) OECD Test guideline 406
Germ cell mutagenicity:	Hamster – ovary	Result: negative
Mutagenicity (micronucleus test):	Mouse (Male & Female)	Result: negative

Carcinogenicity:

- IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
- ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
- NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
- OSHA: No component of this product present at levels greater than or equal to 01% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity	No data
Specific target organ toxicity – single exposure:	No data
Specific target organ toxicity – repeated exposure:	No data
Aspiration hazard	No data

Additional Information:

RTECS: GV5020833

12. ECOLOGICAL INFORMATION

Isophoronediamine: (2855-13-2)

Toxicity:

Toxicity to fish:	semi-static test LC50 – Leuciscus idus (Golden orfe)	110 mg/l – 96 h
Toxicity to daphnia and Other aquatic Invertebrates	Immobilization EC50 – Daphnia magna (Water flea)	55 mg/l – 24 h
	Daphnia magna (Water flea) 230 mg/l – 48 h (OECD Test Guideline 202)	
Toxicity to algae	static test IC50 – Desmodesmus subspicatus (green algae)	700 mg/l – 72 h
Toxicity to bacteria	EC10 – Pseudomonas putida	1,120 mg/l – 18 h

Persistence and degradability

Biodegradability	Aerobic – Exposure time 28 d	Result: 8% - Not readily biodegradable

Bioaccumulative potential	No data
Mobility in soil	No data
Results of PBT and vPvB assessment	Assessment not available as chemical safety assessment not required/not conducted
Other adverse effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life.

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations.

EPA WASTE NUMBER: NA

14. TRANSPORTATION INFORMATION

US DOT

Proper Shipping Name:	Paint Related Material
Hazard Class:	8
Packing Group:	II
UN Number:	UN3066
ERG Code	153
Marine Pollutant	No

IATA - DGR

Proper Shipping Name:	Paint Related Material
Hazard Class:	8
Packing Group:	II
UN Number:	UN3066
Packing Instruction (cargo aircraft)	855
Packing instruction (passenger aircraft)	851

IMDG

Proper Shipping Name:	Paint Related Material
Hazard Class:	8
Packing Group:	II
UN Number:	UN3066
EmS code	F-A, S-B
Marine Pollutant	No

15. REGULATORY INFORMATION

US Federal Regulations

TSCA Section 12(b) export Notification (40 CFR 707, Subpt. D

None present or none present in regulated quantities.

US. Toxic Substances Control Act (TSCA) Section 5(a)(2) Final Significant New Use Rules (SNURs) (40 CFR 721, Subpt E)

None present or none present in regulated quantities.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities

CERCLA Hazardous Substance List (40 CFR 302.4)

None present or none present in regulated quantities

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Skin Corrosion or Irritation, Serious eye damage or eye irritation, Respiratory or Skin Sensitization

SARA 302 Extremely Hazardous Substance

None present or none present in regulated quantities

US EPCRA (SARA Title III) section 304 Extremely Hazardous Substances Reporting Quantities and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substances

SARA 311/312 Hazardous Chemical

Chemical Identity	Threshold Planning Quantity

SARA 313 (TRI Reporting)

Tin Antimony Grey Casserite	68187-54-2	< 9% by weight

Clean Air Act (CAA) section 112® Accidental Release Prevention (40 CFR 68.13):

None present or none present in regulated quantities

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities

STATE REGULATORY INFORMATION: Components of this product are covered under specific State regulations, as denoted below:

New Jersey Right-to-know: The following is required composition information:

CAS Number:	13463-67-7	12001-26-2	14808-66-7	1309-37-1
RTK Number	(1861)	(1659)	(1660)	(1036)
Chemical Name:	Titanium dioxide	Mica	Silicone dioxide	Iron Oxide

Pennsylvania Right-to-know: The following is required composition information:

CAS No,	12001-26-2	13463-67-7	14808-60-7	1309-37-1
Common Name:	Mica	Titanium Dioxide	Silicone Dioxide	Iron Oxide

CALIFORNIA PROPOSITION 65: ⚠ The below list of compounds is known to the State of California to cause cancer, birth defects or other reproductive harm: Carcinogen

CAS No.	13463-67-7	1333-86-4	14808-60-7
Common Name:	Titanium Dioxide	Carbon Black	Silicone Dioxide (Quartz-Respirable

Canadian DSL: All components of this product are on the Canatian DSL

WHMIS 1988 Classification:

D2A - Poisonous and infectious material - Other effects - Very toxic
D2B - Poisonous and infectious material - Other effects - Toxic
E - Corrosive material

WHMIS 1988 Health Effects Criteria Met by this Chemical:

D2A - Chronic toxicity - very toxic - other
D2A - Carcinogenicity - very toxic - other
D2B - Skin sensitization - toxic - other
E - TDG class 8 - corrosive substance

WHMIS 1988 Ingredient Disclosure List:

Included for disclosure at 1% or greater.

16. OTHER INFORMATION

PREPARED BY: BILL BEACH
CROSSFIELD PRODUCTS CORP,

THIS INFORMATION IS DRAWN FROM RECOGNIZED SOURCES BELIEVED TO BE RELIABLE. CROSSFIELD PRODUCTS CORP. MAKES NO GUARANTEES NOR ASSUMES ANY LIABILITY IN CONNECTION WITH THIS INFORMATION. THE USER SHOULD BE AWARE OF CHANGING TECHNOLOGY, RESEARCH, REGULATIONS AND ANALYTICAL PROCEDURES THAT MAY REQUIRE CHANGES HEREIN. THE ABOVE DATA IS SUPPLIED UPON THE CONDITION THAT PERSONS WILL EVALUATE THIS INFORMATION AND THEN DETERMINE ITS SUITABILITY FOR THEIR USE.

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. It is used for computer-related searching.

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**. Skin adsorption 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. **O**ccupational **S**afety and **H**ealth **A**dministration (**OSHA**). NIOSH issues exposure guidelines called **R**ecommended **E**xposure **L**evels (**REL**s). When no exposure guidelines are established, an entry of **NE** is made for reference.

HMIS HAZARD RATINGS:
HAZARDOUS MATERIALS IDENTIFICATION SYSTEM: 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 over-exposure can result in permanent injury and may be fatal); **4** (extreme acute exposure hazard; onetime over-exposure 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).

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 **N**ational **F**ire **P**rotection **A**ssociation (**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:
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: **LD_{50}** - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; **LC_{50}** - 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/m^3** 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. Data from several sources are used to evaluate the cancer-causing potential of the material. 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 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 death. **BEI** - 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.

REGULATORY INFORMATION:
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. Other acronyms used are: **Superfund Amendments and Reauthorization Act (SARA)**; the **Toxic Substance Control Act (TSCA)**; Marine Pollutant status according to the **DOT**; California's Safe Drinking Water Act (**Proposition 65**); 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 materials package label.