

# CROSSFIELD PRODUCTS CORPORATION

www.crossfieldproducts.com

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## SAFETY DATA SHEET

### 1. PRODUCT IDENTIFICATION

<u>TRADE NAME (AS LABELED):</u>	<b>VaporControl Primer FC, Part B</b>
<u>CHEMICAL NAME/CLASS:</u>	Polyamine Solution
<u>PRODUCT USE:</u>	Decking Basecoat Curative
<u>SUPPLIER/MANUFACTURER'S NAME:</u>	Crossfield Products Corp.
<u>ADDRESS: (West Coast):</u>	3000 E. Harcourt St. Rancho Dominguez, CA 90221 (Headquarters)
<u>ADDRESS: (East Coast):</u>	140 Valley Rd. Roselle Park, NJ 07204
<u>EMERGENCY PHONE:</u>	<b>CHEMTREC:</b> 800-424-9300
<u>DATE OF PREPARATION:</u>	March 31, 2020
<u>REVISION DATE:</u>	First Issue

### 2. HAZARD(S) IDENTIFICATION



**Signal Word:** (Danger)

**Hazard Statements:**

Harmful if swallowed or inhaled  
Causes severe skin burns and eye damage  
May cause an allergic skin reaction.  
Suspected of damaging fertility or the unborn child  
May cause damage to organs through prolonged or repeated exposure.

**Precautionary Statements (Prevention):**

Use only outdoors or in a well-ventilated area. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe dust/fume/gas/mist/vapors/spray. Wear protective gloves/protective clothing/eye protection/face protection. Contaminated work clothing should not be allowed out of the workplace. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Avoid release to the environment.

**Precautionary Statements (Response):**

IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water (or shower). If skin irritation or rash occurs: Get medical advice/attention. IF SWALLOWED: Call a POISON CENTER/doctor/... if you feel unwell. Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor. Wash contaminated clothing before reuse. Collect spillage.

**GHS Classification**

Acute toxicity (Oral) – Category 4  
Acute toxicity (Inhalation – vapor) – Category 4  
Acute toxicity (Inhalation-dust and mist) – Category 4  
Skin Corrosion/Irritation – Category 1B  
Serious eye damage/eye irritation – Category 1  
Skin sensitization – Category 1  
Reproductive toxicity – Category 2  
Specific Target Organ Toxicity - Category 2  
Repeated Exposure

**Precautionary Statements (Storage):**

Store locked up

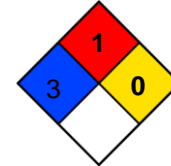
**Precautionary Statements (Disposal):**

Dispose of contents/ container to an approved waste disposal plant.

**HMIS-RATINGS (SCALE 0 – 4)**

<b>HEALTH</b>	3
<b>FLAMMABILITY</b>	1
<b>REACTIVITY</b>	0

Health = 3  
Fire = 1  
Reactivity = 0

**NFPA RATING****3. COMPOSITION / INFORMATION ON INGREDIENTS**

CHEMICAL NAME	CAS #	%	EXPOSURE LIMITS IN AIR					
			ACGIH		OSHA		IDLH	OTHER
			TLV mg/m <sup>3</sup>	STEL mg/m <sup>3</sup>	PEL mg/m <sup>3</sup>	STEL mg/m <sup>3</sup>		
m-Phenylenebis(methylamine)	1477-55-0	25 - <50	NE	NE	NE	NE	NE	NIOSH 0.1
4-tert-butylphenol	98-54-4	25 - <50	NE	NE	NE	NE	NE	
4,4'-Diaminodicyclohexylmethane	1761-71-3	8 - <10	NE	NE	NE	NE	NE	
2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine	25513-64-8	3 - <5	NE	NE	NE	NE	NE	
Methyleneoxide, polymer with benzenamine, hydrogenated	135108-88-2	1 - <3	NE	NE	NE	NE	NE	
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: Component = 0 Grams/Liter		As Applied – 15 Grams/Liter (Part of Multi-Component System)						

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**

**General Advice:** First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Inhalation:** Move person to fresh air. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc.). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

**Skin contact:** Immediate continued and thorough washing in flowing water for at least 30 minutes is imperative while removing contaminated clothing. Prompt medical consultation is essential. Wash clothing before reuse. Properly dispose

of leather items such as shoes, belts, and watch bands. Suitable emergency safety shower facility should be immediately available.

**Eye contact:** Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.

**Ingestion:** Do not induce vomiting. Give one cup (8 ounces or 240 ml) of water or milk if available and transport to a medical facility. Do not give anything by mouth unless the person is fully conscious.

**Most important symptoms and effects, both acute and delayed:** Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

**Notes to physician:** Maintain adequate ventilation and oxygenation of the patient. Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. If burn is present, treat as any thermal burn, after decontamination. Due to irritant properties, swallowing may result in burns/ ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. No specific antidote Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

## 5. FIRE-FIGHTING MEASURES

FLASH POINT, °C (method): >93.3°C (>200°F) Closed Cup

AUTOIGNITION TEMPERATURE, °C: ND

FLAMMABLE LIMITS (in air by volume, %):

FIRE EXTINGUISHING MATERIALS:

Water Spray: YES

Foam: YES

Halon: ND

Lower (LEL): NE

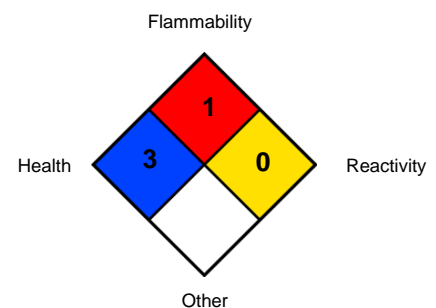
Upper (UEL): NE

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, aldehydes, nitrogen oxides and 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.

**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 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 Apparatus.

**EYE 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 MSDS (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.



Vapor Respirator



Safety Glasses



Safety Gloves



Synthetic Apron

## 9. PHYSICAL and CHEMICAL PROPERTIES

**RELATIVE VAPOR DENSITY (air = 1):** ND

**SPECIFIC GRAVITY (water = 1):** 1.0

**SOLUBILITY IN WATER:** Slightly soluble.

**VAPOR PRESSURE, mm Hg @ 20 °C:** NE

**ODOR:** Amine

**LOG WATER/OIL DISTRIBUTION COEFFICIENT:** Not available.

**APPEARANCE AND COLOR:** Clear to hazy amber viscous liquid

**HOW TO DETECT THIS SUBSTANCE (warning properties):** ND

**EVAPORATION RATE (n-BuAc=1):** ND

**MELTING/FREEZING POINT:** Not established.

**BOILING POINT:** Not established

**pH:** Not Established (alkaline)

## 10. STABILITY and REACTIVITY

**STABILITY:** Stable.

**DECOMPOSITION PRODUCTS:** Nitric acid. Ammonia. Nitrogen Oxides. Nitrogen oxide can react with water vapors to form corrosive nitric acid. Carbon Monoxide. Carbon Dioxide. Aldehydes. Flammable hydrocarbon fragments. Nitrosamine.

**MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE:** Reactive metals (e.g. sodium, calcium, zinc etc.) Materials reactive with hydroxyl compounds. CAUTION! N-Nitrosamines, many of which are known to be potent carcinogens, may be formed when the product comes in contact with nitrous acid, nitrites or atmospheres with high nitrous oxide concentrations. Nitrous acid and other nitrosating agents Organic acids (i.e. acetic acid, citric acid etc.). Mineral Acid Sodium hypochlorite. Product slowly corrodes copper, aluminum, zinc and galvanized surfaces. Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion. Oxidizing agents.

**HAZARDOUS POLYMERIZATION:** Will not occur by itself. Considerable exothermic reaction with amine resins is possible.

**CONDITIONS TO AVOID:** Avoid exposure or contact to extreme temperatures and incompatible chemicals.

## 11. TOXICOLOGICAL INFORMATION

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

### Benzene-1,3-dimethaneamine (MXDA) (1477-55-0)

Acute Oral Toxicity	LD50: 980 mg/kg	(Species – Female Rat) OECD Test Guideline 401
Inhalation:	LC50 (4h): 1.34 mg/l	(Species – M&F Rat) OECD Test Guideline 403
Acute Dermal Toxicity	LD50: > 2,000 mg/kg	(Species – Rabbit) OECD Test Guideline 402
Skin corrosion/irritation:	Corrosive (Rat 4 h)	Directive 67/548/EEC, Annex V, B.4
Serious eye damage/eye irritation:		Severe eye irritation (Rabbit – 24 h)
Respiratory or skin sensitization:		May cause sensitization by skin contact (Mouse) OECD Test Guideline 429

#### 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.

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.

#### Additional Information:

Repeated dose toxicity Rat – male and female – inhalation – NOEL: 5 mg/m<sup>3</sup>

RTECS: PF897000

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea

### **4-tert-Butylphenol: (98-54-4)**

Acute Oral Toxicity: LD50: >2,000 mg/kg (Rat,) (OECD Test Guideline 401)

Acute Inhalation Toxicity: LCLO = 5.6 mg/l (Rat) (OECD Test Guideline 403)

Remarks: Nutritional and Gross Metabolic: Weight loss or decreased weight gain.

Acute Dermal Toxicity No data available

Skin corrosion/irritation: Moderate skin irritation 4h (Rabbit) 4h (OECD Test guideline 404)

Serious eye damage/eye irritation: Severe eye irritation 24h (Rabbit) (OECD Test Guideline 405)

Respiratory or skin sensitization: Does no cause skin sensitization Maximization Test (GMPT) – guinea pig (OECD Test Guideline 406)

Germ cell mutagenicity: No data available

#### 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 available

Specific target organ toxicity – single exposure

No data available

Specific target organ toxicity – repeated exposure

No data available

Aspiration hazard:

No data available

#### Additional Information:

RTECS: SJ8925000 Dizziness. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**4,4'-Methylenebis(cyclohexylamine): (1761-71-3)**

Acute Oral Toxicity:	LD50: 380 mg/kg	(Rat-male and female)
Acute Inhalation Toxicity:	No data available	
Acute Dermal Toxicity	LD50: >1,000 mg/kg	(Rabbit-male and female)
Skin corrosion/irritation:	Corrosive	(Rabbit 24 hr)
Serious eye damage/eye irritation:	Corrosive	(Rabbit 24 hr)
Respiratory or skin sensitization:	May cause sensitization by skin contact	(guinea pig) Buehler test (OECD Test Guideline 406)
Germ cell mutagenicity:	Negative	Ames Test ( <i>S. typhimurium</i> )
Mutagenicity (micronucleus test)	Negative	(mouse-male and female)

**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 available
Specific target organ toxicity – single exposure	No data available
Specific target organ toxicity – repeated exposure	Ingestion – may cause damage to organs through prolonged or repeated exposure. Liver, Musculo-skeletal system.
Aspiration hazard:	No data available

**Additional Information:**

Repeated dose toxicity: Rat-male female – Oral – NOAEL: 15 – 50 mg/kg

RTECS: GX1530000

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.  
Cough, Shortness of breath, Headache, Nausea

**2,2,4 (or 2,4,4)-trimethylhexane-1,6-diamine: (25513-64-8)**

Acute Oral Toxicity:	NOAEL (RAT, Oral): f	10 mg/kg
Acute Inhalation:		
Acute Dermal:		
Skin corrosion/irritation:	Corrosive	(Species – Rabbit) OECD Test Guideline 404
Serious eye damage/eye irritation:	No data	
Respiratory or skin sensitization	Strong skin sensitizer	(Guinea Pig) (Magnusson-Kligman test) OECD Test Guideline 406
Germ cell mutagenicity:	No data	
Carcinogenicity:	Not classified	
Reproductive toxicity		Not classified
Specific target organ toxicity – single exposure:		Not classified
Specific target organ toxicity – repeated exposure:		Not classified
Aspiration hazard		Not classified

**SUSPECTED CANCER AGENT:** The major components of this product are not found on the following lists: FEDERAL OSHA Z LIST, NTP, IARC, CAL/OSHA in concentrations > 0.1 %; and are therefore not considered to be, nor suspected to be, cancer-causing agents by these agencies.

**IRRITANCY OF PRODUCT:** This product is severely irritating and corrosive to contaminated tissue.

**SENSITIZATION TO THE PRODUCT:** Prolonged or repeated skin contact can result in the development of rashes, and other allergy-like symptoms.

**REPRODUCTIVE TOXICITY INFORMATION:** Listed below is information concerning the effects of this product and its components on the human reproductive system.

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

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

**Teratogenicity:** This product is not reported to cause teratogenic effects in humans.

**Reproductive Toxicity:** This product is not reported to cause 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.

**BIOLOGICAL EXPOSURE INDICES:** Currently there are no Biological Exposure Indices (BEIs) associated with the components of this product.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE** Skin disorders can be aggravated by over-exposure to this product. Inhalation of this products mists may aggravate respiratory conditions.

**RECOMMENDATIONS TO PHYSICIANS:** Treat symptoms and eliminate over-exposure to this product.

## 12. ECOLOGICAL INFORMATION

**Benzene-1,3-dimethanamine: (1477-55-0)**

Toxicity:

Toxicity to fish:	LC50 (semi-static test) – <i>Oryzias latipes</i>	87.6 mg/l – 96 h (OECD Test Guideine 203)
Toxicity to daphnia and Other aquatic Invertebrates	EC50 (static test)– <i>Daphnia magna</i> (Water flea)	15.2 mg/l – 48 h (OECD Test Guideline 202)
Toxicity to algae	IC50 (static test) – <i>Pseudokirchneriella subcvtiata</i> (algae)	700 mg/l – 72 h (OECD Test Guideline 201)
Toxicity to bacteria	EC50 (respiration inhibition) – sludge Treatment	>1,000 mg/l – 30 h (OECD Test Guideline 209)
Persistence and degradability		
Biodegradability	Biotic/Aerobic – Exposure time 28 d	Result: 49% - Not readily biodegradable (OECD Test Guideline 301B)
Bioaccumulation	Low bioaccumulation potential	

**4,4'-Methylenebis(cyclohexylamine): (1761-71-3)**

Toxicity to fish:	static test LC50 – <i>Leuciscus idus</i> (golden orfe) – 67.8 mg/l (96 h) (DIN 38412)	
Toxicity to daphnia and other Aquatic invertebrates	static test EC50 – <i>Daphnia magna</i> (Water flea) – 9.24 mg/l (48 h)	
Toxicity to Algae:	static test EC50 – <i>Desmodesmus subspicatus</i> (green algae) – 140-200 mg/l (72 hr) NOEC – <i>Desmodesmus subspicatus</i> – 7.6 mg/l (OECD Test Guideline 201)	
Toxicity to bacteria:	EC50 – <i>Pseudomonas putida</i> – 156 mg/l (30 min)	
Persistence and degradability	Biodegradaability aerobic – Exposure time (28 d) result <10% According to the results of tests of this roduct is not readily biodegradable.	
Bioaccumulative potential	No data available	
Mobility in soil	No data available	



**4-tert-Butylphenol: (98-54-4)**

Toxicity to fish:	LC50 – Pimephales promelas (fathead minnow) – 5.14 mg/l (96 h)
Toxicity to daphnia and other Aquatic invertebrates	Immobilization EC50 – Daphnia magna (Water flea) – 4.8 mg/l (48 h) (OECD Test Guideline 202)
Toxicity to Algae:	IC50 – Desmodesmus subspicatus (green algae) – 11.2 mg/l (72 h) (OECD Test Guideline 201)
Persistence and degradability	aerobic – Exposure time 28 d Result: 60% Biodegradable (OECD Test Guideline 301F) Remark: The 10 day time window criterion is not fulfilled
Bioaccumulative potential	Leuciscus idus melanotus – 3 d 46 ug/l Bioconcentration factor (BCF): 120 Cyprinus carpio (Carp) – 56 d 40 mg/l Bioconcentration factor (BCF): 20.43
Mobility in soil	No data available
Results of PBT and vPvB assessment:	PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
Other adverse effects	Toxic to aquatic life with long lasting effects. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

**2,2,4 (or 2,4,4)-trimethylhexane-1,6-diamine: (25513-64-8)**

Toxicity:			
Toxicity to fish:	LC50 – (Leuciscus idus melanotus)	174 mg/l	48h
Toxicity to daphnia and Other aquatic Invertebrates	EC50 – Daphnia magna (Water flea)	31.5 mg/l	– 24 h
Chronic Hazards to the aquatic environment			
Fish	NOEC	Danio rerio (zebra fish)	10.9 mg/l 34d
Aquatic Invertebrates	NOEC	Daphnia magna	1.02 mg/l 21d
Toxicity to aquatic plants	ErC50	Algae (Pseudokirchneriella subcapitata)	43.5 mg/l 72h
	NOEC	Algae (Pseudokirchneriella subcapitata)	16 mg/l 72h
Persistence and degradability			
Biodegradability	Result: 7%		
Bioaccumulative potential	In view of the relatively low octanol/water coefficients of distribution, no significant accumulation of the substance in organisms is to be expected.		
Mobility in soil	The soil mobility of the substance is only minimally affected by adsorption to soil components. The substance will occur mainly in bodies of water due to its environmental distribution characteristics. The effects of light decompose the substance rapidly in the atmosphere.		

**13. DISPOSAL CONSIDERATIONS**

**PREPARING WASTES FOR DISPOSAL:** Waste disposal must be in accordance with appropriate Federal, State, and local regulations. It may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority.

**14. TRANSPORTATION INFORMATION**

<u>Department of Transportation:</u>		<u>IMDG Shipping Data</u>	
Proper Shipping Name:	Paint related material	Proper Shipping Name:	Paint related material
Class:	8	Class:	8
UN/ID No.:	UN3066	UN/ID No:	UN3066
Packing Group:	II	Packing Group:	II
ERG Code	153	EMS Number:	F-A,S-B
Marine Pollutant	No	Marine Pollutant	No

ICAO/IATA Shipping Data:

Proper Shipping Name: Paint related material  
 Class: 8  
 UN/ID No.: UN3066  
 Packing Group: II  
 Cargo Packing Instruction: 855  
 Passenger Packing Instruction: 851  
 Marine Pollutant: No

**15. REGULATORY INFORMATION****US Federal Regulations****TSCA Section 12(b) Export Notification (40CFR 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**

Acute toxicity (any route of exposure), Skin Corrosion or irritation, Serious eye damage or eye irritation, Respiratory or Skin Sensitization, Reproductive toxicity, Specific target organ toxicity (single or repeated exposure)

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

None present or none present in regulated quantities.

**US. EPCRA (SARA Title III) Section 312 Extremely Hazardous Substances Reporting Quantities (40 CFR 355, Appendix A)****Chemical Identity****Threshold Planning Quantity**

m-Phenylenebis(methylamine)	10,000 lbs
4-tert-butylphenol	10,000 lbs
4,4'-Diaminodicyclohexylmethane	10,000 lbs
2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine	10,000 lbs
Methyleneoxide, polymer with benzenamine, hydrogenated	10,000 lbs

**US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) – Supplier Notification Required**

None present or none present in regulated quantities.

**Clean Air Act (CAA) Section 112® Accidental Release Prevention (40 CFR 68.130):**

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

**US State Regulations****California Proposition 65**

No ingredient requiring a warning under CA Prop 65

**New Jersey Worker and Community Right-to Know Act**

M-Phenylenebis(methylamine)

2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine

**Massachusetts RTK – Substance List**

M-Phenylenebis(methylamine)

**Pennsylvania RTK – Hazardous Substances**

M-Phenylenebis(methylamine)

**Rhode Island RTK**

M-Phenylenebis(methylamine)

**Canadian DSL:** All components of this product are on the Canadian DSL.

WHMIS:

**D2B-** Poisonous and Infectious Materials/Other Effects



Class D - Poisonous and Infectious Material  
Division 2 Materials Causing Other Toxic Effects

**E.** Corrosive Material



Class E - Corrosive Material

## 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. 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.

**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 **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:**

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<sub>50</sub>** - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; **LC<sub>50</sub>** - 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<sup>3</sup>** 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.