

MATERIAL SAFETY DATA SHEET

EXTERIOR PORTFOLIO BY CRANE

PRODUCT: COMMERCIAL VINYL COMPOUNDS

ISSUED: 12-09

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SECTION I

EXTERIOR PORTFOLIO BY CRANE

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Chemical Family	Vinyl resin: chloroethene polymer
Chemical Name / Synonyms	Poly (vinyl chloride), PVC, vinyl
Trademark	Crane Performance Siding Blending Vinyl Compounds
Formula	Vinyl Resin* plus functional additives (CH ₂ CHCl) _n
C.A.C. Registry No.	Not Applicable (Mixture)
Product Use	Various Applications

* PVC Dryblend contains <= 1.0 PPM residual vinyl chloride monomer.

SECTION II – HAZARDOUS INGREDIENTS

Hazard summary Statement: CAUTION! Processing fumes may cause irritation of the eyes and respiratory tract. Use with adequate ventilation. Avoid breathing process emissions. Read entire Material Safety Data Sheet (MSDS).

Exterior portfolio by Crane vinyl compounds are mixtures of thermoplastic polyvinyl chloride or copolymer resin and functional additives, such as, processing aid, heat stabilizer, plasticizer, lubricant, impact modifier, pigment and/or other ingredients.

PVC Polymer	70 – 95%	
Inert Fillers	0 – 30%	CaCO ₃ , TiO ₂
Heat Stabilizers	0 – 2%	Organotin Compounds
Lubricants	0 – 4%	Calcium Stearate; Polyethylene, Parafin, Polyamide Compounds or Esters
Process Aids	0 – 2%	Acrylic Compounds
Impact Modifiers	0 – 10%	CPE, ABS, MBS or Acrylic Compounds
Colorants	0 – 5%	Organic and Inorganic Colorants
Chemical Blowing Agents	0 – 1%	Azo Compounds or Sodium Bicarbonate

This product may contain one or more of the following substances subject to reporting under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40CFR372.

INGREDIENT	C.A.S. NUMBER	NATURE OF HAZARD	COMMENTS
PIGMENT (CHROMIUM CPD)	68187-097	HEAVY METAL CONTENT DO NOT INGEST	REPORTABLE UNDER SARA SECTION 313
PIGMENT (ANTIMONY CPD)	68186-90-3	ALSO CONTAINS CHROMIUM (+3)	REPORTABLE UNDER SARA SECTION 311-313
PIGMENT (CHROMIUM CPD)	1308-38-9	CHROMIUM COMPOUND	REPORTABLE UNDER SARA SECTION 313
PIGMENT (COPPER CPD)	68186-91-4	HEAVY METAL CONTENT DO NOT INGEST	REPORTABLE UNDER SARA SECTION 313
PIGMENT (MANGANESE CPD)	71750-83-9	HEAVY METAL CONTENT DO NOT INGEST	REPORTABLE UNDER SARA SECTION 313
PIGMENT (CHROMIUM CPD)	71631-15-7	HEAVY METAL CONTENT DO NOT INGEST	REPORTABLE UNDER SARA SECTION 313

SECTION III – PHYSICAL DATA

APPEARANCE: Pigmented powder	SPECIFIC GRAVITY: Range 1.3 – 1.55
ODOR: Slight characteristic	MELTING POINT: Varies
PERCENT VOLATILES: Varies	GLASS TRANSITION TEMPERATURE: Varies
PHYSICAL STATE: Solid	BULK DENSITY: Varies

SECTION IV – FIRE AND EXPLOSION HAZARD DATA

Flash Point	Not established for the product; the vinyl resin portion of the product has a flash-ignition temperature of approximately 391°C (735°F) and a self-ignition temperature of approximately 454°C (850°F). ASTM D-1929.	
Notes	Flash-Ignition Temperature	The lowest initial temperature of air passing around the specimen at which sufficient combustible gas is evolved to be ignited by a small external pilot flame.
	Self-Ignition Temperature	The lowest initial temperature of air passing around the specimen at which, in absence of an ignition source, ignition occurs of itself, as indicated by an explosion, flame or sustained glow.
Extinguishing Media	Water, ABC dry chemical, protein type air foams. (Carbon dioxide may be ineffective on larger fires due to lack of cooling capacity which may result in reignition.)	

Special Firefighting Procedures	Wear self-contained breathing apparatus (SCBA) in positive pressure mode. Personnel not having suitable respiratory protection must leave the area to prevent significant exposure to toxic combustion gases from any source. In enclosed or poorly ventilated areas, wear SCBA during cleanup immediately after a fire as well as during the attack phase of firefighting operations.
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Unusual Fire Hazards (Powder Compounds Only): Exterior Portfolio by Crane powder compounds burn with difficulty because a substantial amount of energy is required to break down the polymer into smaller fragments that will sustain combustion in the gas phase, principally as a consequence of the action of the halogen content of the material. Consequently, Crane Performance Siding Blending powder compounds are difficult to ignite. Fires will tend to extinguish naturally in the absence of a substantial external source of heat or flame. Hydrogen chloride is generated during combustion and acts as a flame quencher in the vapor phase. Crane Performance Siding Blending powder compounds will release less heat than many other combustible materials. Precautions should be taken similar to those for any other combustible materials, e.g. wood or other plastics.

As previously mentioned, hydrogen chloride is generated upon combustion of the material. When dissolved in water, hydrogen chloride becomes an acid and can have a corrosive effect upon many metals. Since this corrosion can be a slow process which will take place long after initial exposure, prompt cleaning of surfaces with water-based detergents is indicated.

The smoke generated when Exterior Portfolio by Crane poly (vinyl chloride) powder compounds burn is within the narrow limits of toxicity of the smoke from all commonly used materials. The primary toxic combustion products are carbon dioxide and hydrogen chloride. Carbon monoxide is an asphyxiant generated by all natural and synthetic organic materials from incomplete combustion and is the principal toxicant in fire atmospheres. Hydrogen chloride is an irritant, which has a limited lifetime in any fire atmosphere. The doses of carbon monoxide and hydrogen chloride needed to cause lethality are very similar. The combustion products of Exterior Portfolio by Crane powder compounds include many other compounds such as carbon dioxide, from complete combustion, and water, but do not include phosgene, acrolein or vinyl chloride.

Explosive Characteristics (Powder Compounds Only): Exterior Portfolio by Crane powder compounds have a very low tendency to explode. However, as with any powder materials, care should be taken in addressing ignition sources in working and handling areas.

SECTION V – REACTIVITY

Stability	Stable
Hazardous Polymerization	Will not occur.
Hazardous Decomposition Products	Hydrogen chloride, carbon monoxide, carbon dioxide and small amounts of benzene and aromatic and aliphatic hydrocarbons sometimes with aliphatic olefins.
CAUTION! Prolonged heating (approximately 30 minutes or more) of the product above 200°C (392°F) or short term heating at 250°C (482°F) may result in rapid evolution of hydrogen chloride.	
Incompatibility (Materials to Avoid)	Avoid contact with strong oxidizers. Also, avoid contact with acetal or acetal copolymers and with amine containing materials during processing. At processing conditions, these materials are mutually destructive involve rapid degradation. Thoroughly purge are mechanically clean processing equipment to avoid even trace quantities of these materials from coming in contact with each other. Prevent cross contamination of feedstocks.

SECTION VI – HEALTH HAZARD DATA

Threshold limit value: Not Established

NATURE OF HAZARD

Handling of PVC compound may result in the generation of dust. The dust is classed as a nuisance dust. Exposure to the dust may cause physical irritation of contacted areas.

Under burning condition, HCL gas will be produced. HCL gas is irritation to the upper respiratory tract. Exposure to high concentrations of HCL gas may be fatal.

PVC compound may contain trace amounts of vinyl chloride monomer. VCM is regulated as a carcinogen by OSHA, and is listed by NTP and IARC as a carcinogen. Under normal processing conditions, significant exposure to VCM should not occur.

Other processing vapors may produce irritation or acute health effects in some individuals.

EXPOSURE LIMITS	
NUISANCE DUST	OSHA PEL of 15 mg/m ³ TWA* for 8 hours. ACGIH TLV of 10 mg/m ³ TWA for 8 hours
VINYL CHLORIDE	OSHA PEL of 1.0 ppm TWA for 8 hours; 5 ppm for 15 minutes TWA. ACGIH TLV of 5.0 ppm for 8 hours

* TWA – Time Weighted Average

EMERGENCY AND FIRST AID PROCEDURES

Inhalation (of process emissions): Remove affected individual to fresh air. Contact a physician.

Eye Contact: Flush eyes with water for at least 15 minutes while lifting upper and lower eyelids. Seek medical attention if irritation persists.

Skin Contact: Not an anticipated hazard, however, good personal hygiene practices are always recommended for material handling.

Ingestion: Not an anticipated hazard.

SECTION VII – SPILL AND LEAK PROCEDURE

Steps to be taken in case material is released or spilled: Vacuum or sweep material into a clean, properly labeled container for reuse or disposal.

Water disposal method: Dispose of waste in accordance with all federal, state/provincial and local regulations.

TCLP: This product may or may not be hazardous under the USEPA's Toxicity Characteristic Leaching Procedure (TCLP – 40 CFR 261, Appendix II). Material must be checked utilizing this procedure prior to disposal. Any physical or chemical modification of this product may change the TCLP test results.

SECTION VIII – SPECIAL PROTECTION INFORMATION

Ventilation: Effective exhaust ventilation should always be provided to draw fumes or vapors away from workers to prevent routine inhalation. Ventilation should be adequate to maintain the ambient workplace atmosphere below the legislated levels listed in Section VI. Hot melt processing (e.g. extruding and molding), cutting or sawing, machining, regrinding, thermoforming, heat welding and other processing or post-processing operations involving heat sufficient to result in polymer breakdown should be examined to insure adequate ventilation.

Respiratory Protection: Wear a NIOSH/MSHA – approved respirator specific for chemicals listed in Section II and VI, as applicable, when concentrations exceed those limits listed. Comply with OSHA 1910.134 (29 CFR).

Protective Equipment: Wear protective gloves when handling hot materials during processing. Safety glasses are recommended for all industrial activities.

SECTION IX – SPECIAL PRECAUTIONS

Material Handling: As with any product, should dusting occur from material handling, sources of ignition, such as static discharge, should be addressed by the user to prevent the ignition and sudden release of energy from suspended, finely divided particulates. Remove product from walkways and floors to prevent slipping hazards.

Normal Melt Processing: Virtually all thermoplastic materials will emit fumes and/or vapors when heated to processing temperatures. The concentration of these emissions in the workplace air will depend upon variables such as the specific compound formulations, amount processed, processing method and temperature and the effectiveness of exhaust ventilation. Always use Exterior Portfolio by Crane vinyl compound under well-ventilated conditions and avoid continued or prolonged breathing of process vapors. For personal hygiene, wash thoroughly after processing compound, especially before eating, smoking or using toilet facilities. Do not store or consume food in processing areas. Do not use processing equipment to heat food.

Cleanup: Cleanup following normal melt processing should be performed under well-ventilated conditions. Exterior Portfolio by Crane vinyl compound may be held at process temperatures for a short time without significant thermal degradation. However, it should be recognized that exposure to either elevated temperature or excessive heat history (time) will result in decomposition. The time and temperature required to initiate degradation will vary depending upon processing technique, degree of compound stabilization and other factors. As a general rule-of-thumb, degradation begins to occur after about one hour at 177°C (350°F), about 10 minutes at 204°C (400°F) and within five minutes at 232°C (450°F). Equipment should not be shut down for extended time periods with compound in it, or decomposition and possible corrosion of unprotected metal may result. If dies and screws are not to be cleaned manually, then purge equipment prior to shut-down using special vinyl purge compound or a compatible thermoplastic such as general purpose ABS (do not use flame-retarded or halogen-containing grades for this purpose).

Processing Fume Condensates: Processing fume condensates, which may include toxic contaminants, may be combustible and should be periodically removed from exhaust hoods, ductwork and other surfaces. Protective clothing, including impervious gloves, should be worn during cleanup operations to prevent skin contact.

Storage: Sprinklered warehouse areas are recommended. The product by itself will not support combustion, however, materials such as wooden pallets, paper bags, cardboard boxes and other combustible can provide sufficient fuel to cause the product to burn.

Materials Not Used Within One Year: Material not used within one year should be tested to determine if degradation has occurred.

Abnormal Conditions: Abnormal conditions such as equipment malfunction or using improper equipment or procedures, or hang-up or stagnation of material during processing may cause decomposition. Employees involved in removing decomposing material should be provided suitable air-supplied respirators and other appropriate protection.

Housekeeping: Remove any dust generated as a result of material handling from areas such as rafters, roofs, building columns and ductwork to eliminate any secondary potential dust explosion or fire hazards.

SECTION X - TRANSPORTATION

For domestic transportation purposes, vinyl compounds are not classified as hazardous by the U.S. Department of Transportation under Title 49 of the Code of Federal Regulations, 1983 Edition.

DOT Proper Shipping Name:	Not applicable
DOT Hazard Class:	Not applicable
DOT Label:	Not applicable
UN/NA Hazard No:	Not applicable

User's Responsibility

This bulletin cannot cover all possible situations which the user may experience during processing. Each aspect of the user's operation should be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained within this bulletin should be provided to the user's employees or customers. We must rely upon the user to utilize this information to develop appropriate work practice guidelines and employee instructional programs for his or her operation.

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