



CRANE PLASTICS VYCRALAR VINYL COMPOUND  
 CRANE PLASTICS VYCRAN VINYL COMPOUND  
 PRODUCT: COMMERCIAL COMPOUNDS  
 ISSUED: 1-93 SUPERSEDES: 9-90  
 WRITTEN BY: EARL SEXTON

# MATERIAL SAFETY DATA SHEET

## SECTION I

CRANE PLASTICS COMPANY  
 2141 FAIRWOOD AVENUE  
 P. O. BOX 1047  
 COLUMBUS, OHIO 43216  
 TELEPHONE: (614) 443-4891  
 TRANSPORTATION EMERGENCY NO: (614) 443-4891

Chemical Family: Vinyl resin: chloroethene polymer  
 Chemical Name/Synonyms: Poly(vinyl chloride), PVC, vinyl  
 Trade Mark: Vyralar 90 and Vyrcran  
 Formula: Vinyl Resin\* plus functional additives \*(CH<sub>2</sub>CHCl)<sub>n</sub>  
 C.A.C. Registry No: Not Applicable (mixture)  
 Product Use: Various Applications

## 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).

Vyralar 90 or Vyrcran 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<sub>3</sub>,nO<sub>2</sub>
- 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
- Colorants .....0-5% .....Organic and Inorganic Colorants
- Chemical Blowing Agents ...0-1% .....Azo Compounds or Sodium Bicarbonate

\*PVC Dryblend contains less than or equal to 1.0 ppm residual vinyl chloride monomer.

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	CAS NO.	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 313
PIGMENT (CHROMIUM CPD)	1308-38-9	CHROMIUM COMPOUND DO NOT INGEST	REPORTABLE UNDER SARA SECTION 313
PIGMENT (COOPER 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 or Unpigmented Powder  
 Odor: Slight Characteristic  
 Percent Volatiles: Varies  
 Physical State: Solid  
 Specific Gravity: Range 1.3-1.55  
 Melting Point: Varies  
 Glass Transition Temperature: Varies  
 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

**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 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 poorly ventilated areas, wear SCBA during cleanup immediately after a fire as well as during the attack phase of firefighting operations.

Unusual Fire Hazards (Powder Compounds Only): Vycralar90 and Vycran 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 contact of flammable material. Consequentially, Vycralar 90 and Vycran 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 flame quencher in the vapor phase. Vycralar 90 and Vycran powder compounds will release less heat than many other combustible materials. Precautions should be taken similar to extinguish naturally in the absence of a substantial external source of heat or flame, hydrogen chloride is generated during combustion and acts as flame quencher in the vapor phase. Vycralar 90 and Vycran 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 Vycralar 90 and Vycran polyvinyl 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 Vycralar 90 and Vycran 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): Vycralar 90 and Vycran powder compounds have a very low tendency to explode. However, as with any powder materials, care should be take 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 acetal or acetal copolymers and with amine containing materials during processing. At processing conditions, these materials are mutually destructive and involve rapid degradation. Thoroughly purge and mechanically clean processing equipment to avoid even trace qualities 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 LARC as a carcinogen. Under normal processing conditions, significant exposure to VCM should not occur.

Other processing vapors may product irritation an acute health effects in some individuals.

### EXPOSURE LIMITS

NUISANCE DUST: OSHA PEL of 15mg/m<sup>3</sup> TWA\* for 8 hours.

ACGIH TLV of 10mg/m<sup>3</sup> TWA for 8 hours

VINYL CHLORIDE: OSHA PEL of 1.0ppm TWA for 8 hours: 5ppm for 15 minutes TWA.

ACGIH TLV of 5.0 ppm for 8 hours

\*TWA - Time Weighted Average

### Emergency 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 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 respiratory specific for chemicals listed in Section II and VI, as applicable, when concentrations exceed those limit 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 work place air will depend upon variables such as the specific compound formulations, amount processed, processing methods and temperatures and the effectiveness of exhaust ventilation. Always use Vycralar 90 and Vycran vinyl compound under well ventilated conditions and cold continues 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. Vycralar 90 and Vycran 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 shutdown 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, duct work 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 combustibles can provide sufficient fuel to cause the product to burn.

**Material 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 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 duct work 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.

### Disclaimer of Liability

As the conditions or methods of use are beyond the control of Crane Plastics Company, Crane Plastics Company does not assume any responsibility and expressly disclaims any liability for any use of this material. Information contained here is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding the accuracy of the information, the hazardous connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state and local laws and regulations remains the responsibility of the user.



# LIMITED WARRANTY

## Warranty Statement

The manufacturer warrants, for a period of five years from the date of installation, that the WaterFall Gutter Guard System will not peel, blister, pit, flake, corrode, or weather in an uneven or non-uniform manner, as a result of manufacturing defects. If any part or portion of the WaterFall Gutter Guard System fails during that five year period to so perform as a result of manufacturing defects, the manufacturer warrants that the defective material will be replaced. (Limited to the cost of the material only, not including the installation costs).

## Weathering

The term “weathering” refers to the appearance of the color of the gutter guard lineals. Exposure to elements can be expected to cause gradual and uniform color change. This can vary depending on geographical location. A gradual and uniform color change is not a defect hereunder. A defect is defined as any weathering change that occurs on specific exposed sections of lineals in a manner that varies from lineal to lineal (checkerboard effect). It is normal for a weathered lineal to have slight and unobjectionable shade differences in the area of the edges and undersides. A defect will be remedied by the replacement of the material directly affected. A color variance may also occur between any new replacement lineals in comparison to the originally installed lineals due to weathering exposure, and is not indicative of defective material.

## Buyer's Responsibilities

Within a reasonable time after discovery of a suspected manufacturing defect, send a brief written explanation of the defect, along with your dated proof of purchase to:

Crane Performance Siding  
The WaterFall Warranty  
P.O. Box 1058  
Columbus, OH 43216

Upon receipt of this correspondence, the manufacturer may request any additional information, including appropriate photos, and may require a field inspection by a manufacturer's representative. The manufacturer will communicate with you regarding its determination of coverage under this warranty, and regarding any replacement materials to be provided.

## Limitations and Exclusions

This warranty does not cover damage or defect caused by settlement or shifting of structural members of adjoining surfaces, or structural defects of the roof or gutters, fire, wind, flood, lightning or other acts of God, intentional acts and unreasonable use, accident, negligence, exposure to harmful chemicals, pollutants, mildew or airborne stains.

This limited warranty covers only The WaterFall Gutter Guard System. It does not cover the gutter, fascia boards or roof substrate or surface, or any damage to those items caused by installation of The WaterFall Gutter Guard System. The WaterFall Gutter Guard System does not increase the strength of the gutter structure itself, and does not enable the gutter to support weight. Standing on or hanging from the gutter is not advisable, and the manufacturer shall have no liability for any damage resulting from such contact.

THERE ARE NO EXPRESS OR OTHER WARRANTIES EXCEPT AS CONTAINED IN THIS WARRANTY STATEMENT, AND THE WARRANTY STATEMENT IS IN LIEU OF, AND EXCLUDES, ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

THE MANUFACTURER'S LIABILITY IS LIMITED SOLELY AND EXCLUSIVELY TO THE REPLACEMENT OBLIGATION SPECIFICALLY UNDERTAKEN HEREIN, AND IN NO EVENT SHALL THE MANUFACTURER BE LIABLE FOR LABOR, INSTALLATION, FREIGHT, TAXES OR ANY OTHER CHARGES. THE MANUFACTURER SHALL NOT BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR OTHER DAMAGES OF ANY KIND WHATSOEVER WHETHER ANY CLAIM IS BASED UPON THEORIES OF CONTRACT, NEGLIGENCE OR TORT. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU.

THE MANUFACTURER IS NOT THE SELECT CONTRACTOR AND DOES NOT WARRANT DAMAGE OR DEFECT CAUSED BY FAULTY INSTALLATION. PROPER INSTALLATION IS DEFINED AS OUTLINED IN THE INSTALLATION INSTRUCTIONS. FAULTY INSTALLATION OF THIS PRODUCT WHICH GIVES RISE TO A DEFECT RENDERS WARRANTY COVERAGE NULL AND VOID.

No employee, agent or other person is authorized by the manufacturer to vary the terms of its warranty program or to assume for it for any liability in addition to that set forth in this warranty statement

This warranty gives you specific legal rights, and you may also have other rights, which vary, from state to state.

