



**Safety Data Sheet (SDS)**  
In compliance with 1907 / 2006 / EC, Article 31

## 1. Product Identification

**Product Name:** CLEAR & BLACK FPVC

**Effective Date:** MAY 24, 2018

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Product Type: Flexible Polyvinyl Chloride (PVC) Compound

Synonyms: chloroethylene homopolymer compound

Chemical formula:  $(C_2H_3Cl)_n$

CAS: N/A (Mixture)

Product Use: Extrusion and compounding, injection molded parts, extruded parts, films, coatings.

### **Emergency Contact Information**

For transportation emergencies

CHEMTREC: (800) 424-9300

All other emergencies: (323) 636-3346

## 2. Hazard(s) Identification

### **PRECAUTIONARY INFORMATION**

Caution: If proper procedures for processing PVC compounds are not followed, processing vapors can be liberated at elevated temperatures. The presence of these vapors may result in exposure. Additionally, the composition of these fumes or vapors may vary widely according to the individual processing procedures and materials used. Processors must determine for themselves the appropriate equipment and procedures for their operation.

## POTENTIAL HEALTH EFFECTS

1. **Primary routes of exposure**
  - a. Inhalation of emissions during processing at elevated temperature.
2. **Eye**
  - a. Vapors or fumes emitted during processing at elevated temperatures may cause eye irritation. Dust may cause eye irritation from handling.
3. **Skin Contact**
  - a. Vapors or fumes emitted during processing at elevated temperatures may cause skin irritation. Dust resulting from powder handling may cause skin irritation.
4. **Skin Absorption**
  - a. The compound in pellet form is a dry solid material. Absorption into the skin is unlikely in its initial form.
  - b. Vapors or fumes during processing may absorb through the skin at low levels.
5. **Ingestion**
  - a. Slightly toxic by ingestion. Airborne dust may occur during handling, resulting in incidental ingestion. Vapors or fumes emitted during processing at elevated temperatures may be ingested at low levels. Adequate ventilation should be provided.
6. **Inhalation**
  - a. Airborne dust may occur during handling, which can result in a potential inhalation exposure. Vapors or fumes emitted during processing at elevated temperatures may be inhaled if not adequately ventilated.

## 2. Hazard(s) Identification (continued)

### HAZARD CLASSIFICATION

1. **Acute Effects**
  - a. Dust associated with the handling of PVC powder as well as vapors or fumes liberated from PVC compound at high temperatures may be irritating to the eyes, skin and respiratory tract if not adequately ventilated.
2. **Chronic Effects**

- a. Chronic exposure to vapors or fumes from thermally decomposed or decomposing plastics or plastics that are otherwise exposed to elevated temperatures or are processed at elevated temperatures may cause an asthma-like syndrome due to the inhalation of processing vapors or fumes. The onset of irritation may be delayed for several hours. Vapors or fumes may accumulate within the facility during normal operating procedures that involve elevated temperatures. Exposure to these elevated concentrations, if not adequately ventilated, may have significant health effects.

**3. Carcinogenic**

- a. IARC has determined that there is inadequate evidence of carcinogenicity of a polyvinyl chloride compound in both animals and humans. The overall evaluation of polyvinyl chloride is Group 3, meaning that it is not classifiable as a carcinogen (IARC Vol. 19, 1979). Therefore, polyvinyl chloride is not listed as a carcinogen by OSHA, NIOSH, NTP, IARC or EPA.

**3. Composition / Information on Ingredients**

Compounded PVC is in inert material in its normal state in either pellets, or granules. All the ingredients and / or components listed below are encapsulated within the PVC matrix:

Component	% Weight	CAS #	Additional Information
Polyvinyl Chloride Polymer	45% - 80%	9002-86-2	
Inert Fillers	0% - 40%	1317-65-3	Limestone
Heat Stabilizers	3% - 10%	Mixture	Organometallic compounds of barium and/or Calcium Zinc
Plasticizers	0% - 60%	Mixture	High molecular weight esters

Colorants	0% - 5%	Mixture	Organic & Inorganic colorants
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## 4. First Aid Measures

### 1. Inhalation

- a. No adverse effects anticipated under normal conditions if adequately ventilated. However, if exposure occurs, remove the exposed individual to fresh air. Obtain medical attention immediately if irritation persists.

### 2. Skin Contact

- a. No adverse effects anticipated under normal conditions. Flush with water to remove material from skin. Obtain medical attention if irritation persists.

### 3. Eye Contact

- a. In the event of eye irritation, flush eyes with water for at least 15 minutes. Do not rub eyes. Obtain medical attention if irritation persists.

### 4. Ingestion

- a. No effect expected. If large amounts are ingested, seek medical attention. Only induce vomiting at the instructions of a physician.

## 5. Fire Fighting Measures

Properties	Description
Flashpoint	> 600°F
Auto-ignition temperature (ASTM D1929)	+850°F
Flammable limits in air (% by volume)	
Upper:	N/A
Lower:	N/A
Extinguishing Media	Water, Dry Chemical



### Special Firefighting Procedures:

Wear NIOSH/MSHA approved self-contained breathing apparatus & full protective clothing in fire conditions.

**Unusual Fire Hazards:**

Decomposition by burning (generating HCL gas).

## 6. Accidental Release Measures

1. **Protect People**
  - a. Remove unnecessary personnel from the release area. Wear appropriate personal protective equipment during clean up.
2. **Protect the Environment**
  - a. Contain material to prevent contamination of the soil, surface water or ground water.
3. **Clean Up**
  - a. Cleanup uncontaminated material and recycle into process. Sweep or vacuum material and place in a disposal container. Place unusable material into a closed, properly labeled container compatible with the product.

## 7. Handling and Storage

1. **Advice on Safe Handling**
  - a. Use the proper personal protective equipment during handling. Minimize dust generation and accumulation. Use good housekeeping practices.
2. **Protective measures**
  - a. Use methods to minimize generation of dust. Wash thoroughly after handling. PVC resin and compound processing under extreme temperatures beyond normal processing temperatures may result in the release of hydrogen chloride (HCl). Use only in well-ventilated areas.
3. **Storage**

- a. Store in a dry place away from direct sunlight, heat, and incompatible materials. Store away from food and beverages. Reseal containers immediately after use. Store in a well-ventilated, cool area free from high humidity.

## 8. Exposure Controls / Personal Protection

All personal protective equipment should be selected in accordance with the hazard assessment required by 29 CFR 1910.132(d).

### 1. Respiratory Protection

- a. For most conditions, no respiratory protection should be needed. However, if dust is produced during handling, a NIOSH approved air purifying filter respirator that meets the requirements of 29 CFR 1910.134 should be used.
- b. Full-face self contained breathing apparatus may be needed when dealing with vapors from combustion of product. Respirators must be selected based on the airborne levels found in the workplace and must not exceed the working limits of the respirator.

### 2. Eye Protection

- a. Use safety glasses. If there is a potential for exposure to particles, which could cause mechanical injury to the eye, wear chemical or dust proof goggles.

### 3. Skin Protection

- a. Skin protection meeting the requirements of 29 CFR 1910.132 may be needed. Under normal conditions, work clothing should be sufficient. Wash skin if contacted by PVC powder or pellets. Wash contaminated clothing before reusing. Gloves for thermal protection may be necessary when handling hot or molten compound.

### 4. Engineering Controls

- a. Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines. Adequate ventilation should be provided as conditions warrant. Local exhaust ventilation should comply with OSHA regulations and the American Conference of Industrial Hygienists, Industrial Ventilation - A Manual of Recommended Practice.

## 8. Exposure Controls / Personal Protection (continued)

### Exposure Guidelines

No exposure limits have been established for this material. It is recommended that exposure be kept below the limits for particulates not otherwise classified. OSHA-PEL: 15 mg/M<sup>3</sup> 8 hr-TWA (total dust) 5 mg/M<sup>3</sup> 8 hr-TWA (respirable) The American Conference of Governmental Industrial Hygienist (ACGIH) has established a Threshold Limit Value (TLV) (based on an 8-HR TWA exposure) of 1 mg/m<sup>3</sup> for the respirable fraction. This TLV applies only to the polymerized form of vinyl chloride and not the vinyl chloride monomer.

The following materials **may be** present in this product when processed during extreme temperatures that are beyond normal operating temperatures, but are not anticipated to exceed exposure limits under normal processing conditions:

Component	OSHA - PEL	ACGIH-TLV
Hydrogen Chloride (HCl)	5ppm ceiling	2ppm ceiling
Calcium Carbonate	15mg/m <sup>3</sup> 8 hr TWA (total dust) 5mg/m <sup>3</sup> hr TWA (respirable)	10mg/m <sup>3</sup> 8hr TWA

Again, these hazardous components may be released during extreme process temperatures. These components are dependent on processing conditions and should be verified by the processor. Under normal processing conditions, no occupational exposures to vinyl chloride monomer exceeding the established exposure limits for this material are anticipated. The OSHA-PEL for vinyl chloride is 1 ppm over an 8-hr TWA. The OSHA-STEL for vinyl chloride is 5 ppm for any 15-minute period.

## 9. Physical & Chemical Properties

Properties	Description
Appearance	Pellets of varying size, hardness, and color
Odor	No distinct odor
Boiling Point	N/A (solid)
Melting Point	Varies
Solubility	None
Specific Gravity (Water=1.0)	1.15 – 1.70
Vapor Density (Air=1.0)	N/A
Vapor Pressure	N/A
pH	N/A

## 10. Stability & Reactivity

1. **Stability**
  - a. Stable under normal conditions.
2. **Polymerization**
  - a. Hazardous polymerization does not occur.
3. **Conditions to Avoid**
  - a. Instantaneous temperatures above 235 °C(455 °F), prolonged heating at processing temperatures, or excessive shear/heat combinations during

processing can generate hazardous decomposition products.

#### 4. Hazardous Decomposition Products

- a. Overheating may cause thermal degradation of PVC compound. Fumes and vapors (including CO, CO<sub>2</sub>, and HCl) may be generated during this thermal degradation. Emissions are also possible during normal operating conditions, and may accumulate within an inadequately ventilated facility.

#### 5. Incompatible Materials

- a. Do not allow this product to come in contact with acetal (POM) or acetal copolymers within the extruder or molding machine. At processing conditions, the two materials are mutually destructive and involve rapid degradation of the products. Equipment should be purged with acrylic, ABS, polystyrene, or other purge compound to avoid even trace amounts of this product and acetals from coming in contact with each other.

## 11. Toxicological Information

The following information on polyvinyl chloride is extracted from both the HSDB and NTP databases.

### Animal Toxicity:

**Oral:** Rat, TDLO 210 gm/kg

**Inhalation:** Mouse, LC50 140 mg/M<sup>3</sup>/10M

**TDLO** = Lowest toxic dose in a given species by a given route of exposure.

**LC50** = Concentration that is lethal to 50% of a given species by a given route of exposure.

Rodents exposed to PVC by dietary or inhalation routes for 6 to 24 months have shown no significant toxicological effects. While PVC is generally considered an inert polymer, exposure to PVC dust has been reported to cause lung changes in animals and humans, including decreased respiratory capacity and inflammation. However, exposures approaching the nuisance dust exposure limits are not anticipated to pose a significant health risk.

## 12. Ecological Information

### Environmental Concerns

#### 1. Aquatic

- a. No data available.

#### 2. Biodegradation

- a. Not subject to biodegradation.

#### 3. Ecological toxicity



- a. Based on the high molecular weight of this polymeric material, transport of this compound across biological membranes is unlikely.
- b. Accordingly, the probability of environmental toxicity or bioaccumulation in organisms is remote.
- c. Due caution should be exercised to prevent the accidental release of this material to the environment.

## 13. Disposal Considerations

### Waste Management Information

Do not dump into any sewers, on the ground, or into any body of water. Any disposal practice must be in compliance with local, state and federal laws and regulations (contact local or state environmental agency for specific rules). Waste characterization and compliance with applicable laws are the responsibility of the waste generator.

## 14. Transport Information

1. **Proper Shipping Name**
  - a. Polyvinyl Chloride
2. **DOT Hazard Class**
  - a. Non-hazardous
3. **DOT Shipping I.D. No.**
  - a. None
4. **Packing Group (PG)**
  - a. None
5. **Labeling**
  - a. None
6. **Reportable Quantities (RQ)**
  - a. N/A

## 15. Regulatory Information

Regulatory information is not meant to be all-inclusive. It is the user's responsibility to ensure compliance with federal, state or provincial and local laws.

### SARA Title III

#### Section 302 and 304 of the Act; Extremely Hazardous Substances (40 CFR 355)

Component	CAS No.	TPQ (lbs)	RQ (lbs)
None	N/A	N/A	N/A

Note: TPQ - Threshold Planning Quantity RQ - Reportable Quantity

Specific state and local requirements regarding reportable quantities should be reviewed prior to chemical use, as they may differ from the federal reportable quantity requirement as stated above.

### Section 311

#### Hazard Categorization (40 CFR 370)

Acute	Chronic	Fire	Pressure	Reactive
Not Listed	N/A	N/A	N/A	N/A

### Section 313 Toxic Chemicals (40 CFR 372.65)

This product contains the following EPCRA Section 313 chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986:

Component	CAS No.	WT (%)
Not Listed	N/A	N/A

### CERCLA

#### Section 102(a) Hazardous Substances (40 CFR 302.4)

Component	CAS No.	TPQ (lbs)	RQ (lbs)
None	N/A	N/A	N/A

### RCRA

This product, as supplied, is not a hazardous waste according to the USEPA's Toxicity Characteristic Leaching Procedure. Any physical or chemical modification of this product may change the TCLP test results.

### TSCA

All components are listed on the TSCA inventory or are exempt.

### Proposition 65

This product in its normal state does not contain substances known to the State of California to cause cancer and/or reproductive toxicity.

### Canadian Regulations

This product has been classified according to the hazard criteria of the Canadian Controlled Products Regulations, Section 33 and the SDS contains all information required by this regulation.

**WHMIS Classification-** Not a Controlled Product.

## 15. Regulatory Information (continued)

### OSHA 29 CFR 1910.1017

This compound may contain trace levels (<0.001%) of VCM. Under normal working conditions with adequate ventilation, neither the OSHA-PEL of 1 ppm (8-hr TWA), nor the OSHA-STEL (5.0 ppm) should be exceeded. The workplace should be monitored and if the level exceeds any of the PELs or action levels, refer to 29 CFR 1910.1017.

## 16. Other Information

## **IMPORTANT**

The information and data herein are believed to be accurate and have been compiled from sources believed to be reliable. It is offered for your consideration, investigation and verification. Buyer assumes all risk of use, storage and handling of the product in compliance with applicable federal, state, and local laws and regulations.

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The data and recommendations presented herein are based upon a review of files, published SDS's, and standard toxicological reference sources. We make no guarantee or warranty, either expressed or implied as to the accuracy or completeness of these data and recommendations. This information solely relates to the material designated on this SDS, therefore the data contained in this SDS may not be valid towards the combination with any other materials nor within any process.