



MATERIAL SAFETY DATA SHEET

Product Designation: Flametec Cleanroom PVC

Section 1

Manufacturer's Name	Vycom Scranton Products	Phone	1-570-558-8000
Address	801 Corey Street	FAX	570-207-2883
City, State, Zip	Scranton, PA 18505		
Website:	www.vycomplastics.com		

Section 2 – Composition – Information on Ingredients

Ingredient	CAS Number	%
Chlorinated polyvinyl chloride (CPVC)	0068648-82-8	> 56
Nonhazardous ingredients	Proprietary	< 29
Titanium dioxide	0013463-67-7	< 12
Organotin	007440-31-5	< 3.0

Amounts specified are typical and do not represent a specification. Remaining components are proprietary, nonhazardous and/or present at amounts below reportable limits.

Section 3 – Hazardous Identification

Emergency Overview:

- Product is inert/nonhazardous
- Can burn in a fire emitting very irritating smoke

Acute Health Effects:

- This product is not an eye irritant, but dust may cause irritation as would any solid particle on the eye.
- Dust inhalation may cause coughing, mucous production and shortness of breath
- Molten product causes skin burns
- At elevated temperatures (e.g. at melt processing temperature or combustion temperature)
- This product may emit fumes and vapors that cause irritation (possibly severe) to the respiratory tract, eyes and/or skin

Section 3 – Hazardous Identification Cont.

Titanium Dioxide:

- May have a drying effect on the skin.
- From excessive exposure, titanium dioxide may have a drying effect or irritate the mucous membranes
- When inhaled in particulate form (dust) over a long period of time, may cause respiratory disease (lung fibrosis).
- Signs/Symptoms of Exposure
 - Symptoms such as (but not limited to) coughing, tearing, and irritation must be regarded as potentially hazardous, and measures must be taken to avoid exposure.
- Routes of Exposure/Entry
 - Inhalation of dust and/or process vapors; Eye and/or skin contact with just and/or molten polymer
- Target Organs
 - Eyes, Skin, respiratory system
- Medical Conditions aggravated by exposure
 - Pre-existing respiratory disease may be aggravated by prolonged or repeated inhalation of airborne dust.
- Carcinogenic Status
 - Not listed or regulated by IARC, NTP, OSHA or ACGIH

Organotins:

- Can be absorbed through the skin causing effects such as reddening, swelling, irritation, hypersensitivity, shaking, and ataxia (inability to coordinate body or muscular movements)
- The onset of symptoms may not occur until several hours after exposure

Section 4 – First Aid Measures

- If irritation occurs or persists from any route of exposure, remove the affected individual from the area
 - Call a physician
- Eye Contact
 - Treat as any foreign particulate matter
- Skin Contact
 - Wash the affected area thoroughly with plenty of water and soap.
 - If molten polymer contacts the skin, cool the skin rapidly with water or ice
 - See a physician for removal of any adhering material and for treatment of the burn
- Inhalation
 - If the processing vapors, decomposition products or particulates are inhaled, remove individual (s) to fresh air.
 - Provide protection before allowing reentry
- Ingestion
 - No ingestion effects known.
 - Treat symptomatically

Section 5 – Fire Fighting Measures

NFPA Flammability Class:	Class A
Flash Point:	896°F (480°C)
Explosive Range:	Not Applicable

Extinguishing Method:

- NEPA Class A (Ordinary Combustibles)
 - Use water, dry chemical, alcohol foam or protein type foam
 - CO2 is not recommended on Class A fires, as a lack of cooling capacity may result in re-ignition.

Fire Fighting Instructions:

- Wear self-contained breathing apparatus (SCBA) equipped with a full facepiece and operated in a pressure-demand mode (or other positive pressure mode) and protective clothing

Unusual Fire/Explosion Hazards

- Product may burn if an ignition source is present
- Irritating or toxic substances will be emitted upon burning, combustion or decomposition
- Protect product from flames of any kind; maintain proper clearance when using heat devices, etc.
- Hydrogen Chloride
 - A combustion product of chlorinated hydrocarbons, has a corrosive effect on many metals
 - Affected surfaces should be washed with a detergent-based water solution to remove deposits
- Run off water from firefighting may have corrosive effects
- Dust explosion severity experiments show that a typical CPVC resin does not propagate dust explosions when subjected to a 12,000 volt AC electrical discharge at dust cloud concentrations up to 2.0 oz/ft³.
- A secondary dust explosion potential may exist
 - That is, a dust explosion of some other more sensitive material could cause CPVC resin that has settled on overhead surfaces, etc., to be dispersed into the propagating flame-front generated by the exploding product
- As with all organic dusts, fine particles suspended in air in critical proportions and in the presence of an ignition source may ignite and/or explode. \
- Dust may be sensitive to ignition by electrostatic discharge, electrical arcs, sparks, welding torches, cigarettes, open flame, or other significant heat sources.
- As precaution, implement standard safety measures for handling finely divided organic powders.
 - See Section 7 for suggested measures

Section 6 – Accidental Release Measure

Clean-up Techniques

Using care to avoid dust generation, vacuum or sweep into a closed container for reuse or disposal. Do not sweep or flush spilled product into public sewer, streams or other water systems. Place into labeled, closed container; store in safe location to await disposal.

Section 7 – Handling and Storage

Handling

- Although the risk of a dust explosion is low, as a precaution, implement the following safety measures
 - Bond, ground and properly vent conveyors, dust control devices and other transfer equipment
 - Eliminate ignition sources (e.g. sparks, static buildup, excessive heat, etc.)
 - Pouring product from its container may cause an electrostatic buildup which may be discharged as a spark
 - A spark can be an ignition source for solvent vapor/air mixtures
 - If you add this product to any solvent, ensure appropriate safe handling practices such as provision for inerting flammable vapors.
 - Prohibit flow of polymer, powder or dust through non-conductive ducts, vacuum hoses or pipes etc.
 - Only use grounded, electrically conductive transfer lines when pneumatically conveying product
 - Prevent accumulation of dust (e.g. well-ventilated conditions, promptly vacuuming spills, cleaning overhead horizontal surfaces etc.).

Melt Processing and Pre/Post Processing

- Conduct any operations emitting fumes or vapors (including clean up) under well-ventilated conditions
- Avoid breathing process vapors
- Do not hold product for extended periods of time at elevated temperatures or allow thick masses of hot polymer to accumulate because they can decompose emitting hazardous gases
- Do not taste, swallow, or chew products
- Wash thoroughly after processing
- Do not store or consume food in processing areas
- Do not use processing equipment to heat food
- Recommended purge compounds are general purpose acrylic or acrylonitrile-butadienestyrene (ADS) copolymer.
- Do not use flame-retarded or halogen-containing grades
- In cases such as power loss, dismantle die assembly immediately
- Do not allow thick masses to accumulate on the floor or elsewhere

Section 7 – Handling and Storage Cont.

- The mass will begin to thermally decompose and swell due to internal gassing of the molten product
- Gassing may cause the mass to explode, especially if its surface is hardened with water
- Molten waste should be collected as strands or flattened to 2 inches (5cm) or less and quenched in a drum of cold water
- Decomposing product must be removed to a well-ventilated area, preferably outdoors

Processing Fume Condensates

- Fume condensates may include hazardous contaminants from additives
- Condensate may be combustible and should be periodically removed from exhaust hoods, ductwork and other surfaces
- Impervious gloves should be worn during cleanup operations to prevent skin contact

Storage

- Avoid excessive heat
- Do not store near flammable agents
- SPRINKLERED WAREHOUSE AREAS are recommended
- This product by itself typically will not support combustion
- However, other combustible contents can provide sufficient fuel and heat to cause product to burn

Section 8 – Exposure Controls/ Personal Protection

Occupational Exposure Limits

ACGIH TWA	ACGIH STEL	OSHA TWA	OSHA STEL
Chlorinated polyvinyl chloride (CPVC)			
N/E	N/E	N/E	N/E
Nonhazardous ingredients			
N/E	N/E	N/E	N/E
Titanium Dioxide			
10.00 mg/m ³	N/E	10.00 mg/m ³	N/E
Organotin			
0.10 mg/m ³ S	0.20 mg/m ³ S	0.10 mg/m ³ S	N/E

Notes:

- Product particle size is typically > 10 microns (inhalable) : ACGIH

Section 8 – Exposure Controls/ Personal Protection Cont.

- PNOC is 10 mg/m³
- Engineering Controls
 - Always provide effective general and, when necessary, local exhaust ventilation to draw fumes, vapors and/or dust away from workers to prevent routine inhalation
 - Ventilation must be adequate to maintain the ambient workplace atmosphere below the exposure limit (s) outlined in the MSDS.
 - Ventilation guidelines/techniques may be found in publications such as Industrial Ventilation: American Conference of Governmental Industrial Hygienists, 1330 Kemper Meadow Drive, Cincinnati, OH, 45240-1634, USA
- Eye/Face Protection
 - Eye Protection (e.g. goggles) suitable for keeping dust out of the eyes
- Skin Protection
 - Protective gloves required to handle hot material during processing
 - Wear long sleeve shirt and trousers and other equipment as needed to avoid skin contact
- Respiratory protection is not needed with proper ventilation
- Avoid routine inhalation of dust of any kind
- Exercise care when emptying containers, sweeping, mixing or doing other tasks which can create dust
- Wear suitable NIOSH/MSHA approved air-supplied breathing apparatus or airline respirator, if working under abnormal conditions of inadequate ventilation and/or overheated product (such as during equipment malfunction or stagnated product leading to decomposition)
- Wear an organic vapor respiratory approved by NIOSH/MSHA whenever exposure to fumes or vapors exceed the limits listed in this MSDS.
- Cutting operations may create small particles from this product
- If inhalation of particulates cannot be avoided, wear a dust respirator

Section 9 – Physical and Chemical Properties

Form:	Powder
Appearance/Color:	See Product Name
Odor:	None
Solubility (in water):	Insoluble
pH Value:	Not Applicable
Boiling Range:	Not Applicable
Vapor Pressure (mmHg):	Not Applicable
Melting Point:	See Note Below
Evaporation Rate:	Not Applicable
Vapor Density:	Not Applicable

Section 9 – Physical and Chemical Properties Cont.

Partition Coefficient:	Not Applicable
% Volatile Weight:	Not Applicable
Specific Gravity:	1.5 – 1.6

Note: Refer to Processing Guide and/or contact your local Technical Service Representative for melt processing temperature range.

For most products, melt processing is in the range of 390-440°F (177-225°C). However, some products may process at different temperatures.

Section 10 – Stability and Reactivity

Stability: Stable
Hazardous Polymerization: Will not occur

Conditions to Avoid:

- Overheating
- Incompatibility with other materials
- MELT PROCESSING INCOMPATIBILITY:
 - Avoid contact with acetal, acetal polymers, acetal copolymers and amine containing materials.
 - If processed together, these materials may be mutually destructive and degrade rapidly.
 - Prevent cross contamination of feed stocks
 - Thoroughly purge and mechanically clean processing equipment to prevent these materials from coming in contact with each other
 - Refer to technical service reports for specific equipment and procedural recommendation
- Hazardous Decomposition Products
 - Volatiles may be evolved during overheating, combustion, or decomposition
 - These potential decomposition gases have not been fully determined
 - Decomposition products may include carbon monoxide, carbon dioxide, hydrogen chloride, organotin compounds, and hydrocarbons.

Note: Hydrogen chloride is detectable by its sharp pungent odor in concentrations as low as 1-5 ppm. Low concentrations (below 50 ppm) are not harmful in short-term exposures but do provide excellent warning properties by causing coughing or irritation. Because the warning properties response is so strong, humans rarely submit to damaging concentrations – instead, there is an unmistakable urge to leave the area. Repeated or prolonged exposure to high concentrations can cause eye and respiratory damage.

Section 10 – Stability and Reactivity Cont.

- Thermal Processing Emissions
 - Volatiles from melt processing are expected to be the primary hazard in an occupational setting.
 - Well-ventilated conditions are necessary to control exposure to fumes and vapors
 - Trace amounts of organic tin compounds (less than 0.1 mg/m³) may be present

Section 11 – Toxicological Information

Route	Species	Exposure and Dose
Titanium dioxide		
Inhalation	Rat, adult	LC50 > 6.82 mg/l
Oral	Rat, adult	LD50 > 24. g/kg
Skin	Rabbit, adult	LD50 > 10. g/kg
Organotin		
Oral	Rat, adult	LD50 920. mg/kg
Skin	Rabbit, adult	LD50 2000. mg/kg

*As with all chemicals for which test data are limited or do not exist, caution must be exercised through the prudent use of protective equipment and handling procedures to minimize exposure.

Section 12 – Ecological Information

Titanium Dioxide

96 Hour LC50 Fathead minnow > 1000 mg/l

Section 13 – Disposal Considerations

For waste disposal purposes, this product is not known to be defined or designated as hazardous by current provisions of the Federal (EPA) Resource Conservation and Recovery Act (RCRA, 40CFR261).

Incinerate or landfill waste in a properly permitted facility in accordance with federal, state and local regulations.

Land disposal should be in closed containers.

CANADA: Dispose of waste in accordance with federal, provincial and local regulations.

Product may be disposed of by incineration.

Section 14 – Transportation Information

UN Number: N/A
UN Pack Group: N/A
UN Class: N/A
ICAO/IATA Class: N/A
IMDG Class: N/A
ADR/RID Class: N/A

Notes: This product is NOT REGULATED for domestic and international transportation.

Section 15 – Regulatory Information

SARA Title III Section 313

This product does not contain any substance(s) subject to the reporting requirements (i.e., at or above de minimus quantities) of Section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) 40 CFR 372.

SARA Title III Section 312 Hazard Category (40 CFR 311/312)

Acute Health:	Yes	Release of Pressure:	No
Chronic Health:	Yes	Reactive:	No
Fire:	No		

California Proposition 65

Substances known to the state of California to cause cancer, birth defects or other reproductive harm”: None known to be present of none in reportable amounts for occupational exposure as per OSHA’s approval of the California Hazard Communication Standard, Federal Register, page 31159 ff, 6 June 1997.

Chemical identity of some or all components present is confidential business information (trade secret) and is being withheld as permitted by 29CFR1910.1200 (i).

U S (Federal) Regulations

TSCA: All components of this product are either listed on the U.S. Toxic Substances Control Act (TSCA) inventory of chemicals or are otherwise compliant with TSCA regulations.

International Regulations

Canadian DSL: All components in this product are on the Canadian Domestic Substances List (DSL) or are exempt from listing.

The following components are on the Canadian Ingredient Disclosure List (WHMIS):

Tin compound, n.o.s.

Canadian WHMIS: This product is controlled under the Canadian Hazardous Materials Information System (WHMIS) and is classified as: D2B

Monomers are listed: European Union EINECS.

European Union hazard classification: Not a dangerous preparation.

Section 16 – Other Information

HMIS Rating (H-F-R-PPI) 1-1-0-B

NFPA Rating (H-F-R) 2-1-0

KEY: 0=Insignificant; 1=Slight; 2=Moderate; 3=High; 4=Extreme

Hazardous Materials Identification System (HMIS), National Paint and Coatings Assn. rating applies to product “as packaged” (i.e., ambient temperature)

National Fire Protection Association (NFPA) rating identifies the severity of hazards of material during a fire emergency (i.e., ambient temperature)

Other information

Trace Impurities: Less than 0.01% of residual chloroform (CAS 67-66-3) and less than 0.005% of residual carbon tetrachloride (CAS 56-23-5) may remain bound in the polymer. ACGIH identifies each of these chemicals as cancer suspect agents (A2). The OSHA Permissible Exposure Limit (8-hour time-weighted average) to these substances is 2 ppm for chloroform and 5ppm for carbon tetrachloride. The presence of these residual chemicals in the polymer is not expected to create a hazard. In a well-ventilated workplace, the potential concentration of chloroform or carbon tetrachloride will be well below established threshold limit values. Monitoring of Noveon production facilities show chloroform levels to be below 0.00003 % and carbon tetrachloride levels to be below 0.00005% in the workplace air. Noveon production workers are not required to wear special respiratory protection.

Section 17 – Disclaimer of Liability

For information regarding safe use of polyolefin articles and components of articles intended for direct food contact, refer to US FDA as specified in 21 CFR 177.1520 or Formolene PP Technical Data Sheet.

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