

SAFETY DATA SHEET

Product Name: CPVC Powder (Chlorinated Polyvinyl Chloride)

SDS Revision Date: 15-Apr-2026

Version: 1.0

Product Code: CPVC-PWD-001

Applies to: CPVC (Chlorinated Polyvinyl Chloride) thermoplastic powder.

1. Identification
1.1. Product identifier
Product Name: CPVC Powder (Chlorinated Polyvinyl Chloride)
Product Code: CPVC-PWD-001
Chemical Family: Chlorinated Thermoplastic Polymer
CAS Number: 68648-82-8 (Chlorinated polyvinyl chloride)
1.2. Relevant identified uses of the substance or mixture and uses advised against
Recommended Use: Industrial raw material for hot and cold water pipe systems, fire sprinkler systems, industrial chemical piping, cable conduits, valves and fittings, anti-corrosion coatings, adhesives, and chemical equipment.
Uses Advised Against: Any use not approved by the supplier. Do not use in applications requiring continuous contact with strong oxidizing agents or temperatures exceeding 110°C.
1.3. Details of the supplier of the safety data sheet
Company Name: PolymerVerse
Address: 32 N Gould St., Sheridan, WY 82801, USA
Contact Phone: USA: 001-800-ACROS-01 / Europe: +32 14 57 52 11
E-mail: sales@magerial.com

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1.4. Emergency telephone number

USA: 001-800-ACROS-01 / Europe: +32 14 57 52 11

2. Hazard(s) identification

2.1. Classification of the substance or mixture (in accordance with GHS)

Hazard Category	Classification
Flammable Solids	Not classified (CPVC is self-extinguishing; however, fine powder may form combustible dust clouds)
Combustible Dust	May form explosive dust-air mixtures when finely dispersed
STOT – Single Exposure (Category 3)	May cause respiratory irritation (H335)
STOT – Repeated Exposure (Category 1)	Causes damage to lungs through prolonged or repeated inhalation of dust (H372)
Serious Eye Damage/Eye Irritation (Category 2B)	Causes eye irritation (H320)

2.2. GHS Label elements

Exclamation Mark	Health Hazard
Respiratory/eye irritation	Long-term lung damage risk

Signal Word: DANGER

Hazard Statements (H-phrases):

H320: Causes eye irritation.

H335: May cause respiratory irritation.

H372: Causes damage to lungs through prolonged or repeated exposure (inhalation of dust).

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Precautionary Statements (P-phrases):

Prevention: Avoid breathing dust (P261). Use only with adequate ventilation (P271). Wear protective gloves, eye/face protection (P280). Use explosion-proof electrical equipment where dust may be generated (P241).

Response: IF INHALED: Remove person to fresh air and keep comfortable for breathing (P304+P340). Call a POISON CENTER or doctor if you feel unwell (P312). If eye irritation persists: Get medical advice/attention (P337+P313).

Storage: Store locked up (P405). Keep container tightly closed in a cool, dry place.

Disposal: Dispose of contents/container in accordance with local, regional, national, and international regulations (P501).

2.3. Other hazards

Fine CPVC powder can form combustible dust clouds when dispersed in air in the presence of an ignition source. Thermal decomposition (during overheating or fire) may release highly toxic and corrosive fumes including hydrogen chloride (HCl) , carbon monoxide (CO), and other chlorinated compounds. CPVC is hygroscopic; keep containers tightly sealed to prevent moisture absorption.

3. Composition/information on ingredients

Ingredient	Weight %	CAS Number	EC Number
Chlorinated Polyvinyl Chloride (CPVC)	≥ 90%	68648-82-8	614-997-5
Chlorine Content	63 – 69%	—	—
Other additives (stabilizers, processing aids)	< 10%	—	—

Note: CPVC is produced by further chlorination of PVC resin. Typical residual PVC content is < 10%. Stabilizers (e.g., organotin, calcium-zinc) and processing aids may be present at < 5%. Batch-specific details available upon request.

4. First aid measures
4.1. Description of first aid measures

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Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately. In case of thermal decomposition fumes, monitor for pulmonary edema.

Skin Contact: Wash with plenty of soap and water. Remove contaminated clothing. If molten material contacts skin, cool rapidly with cold water; do not attempt to remove solidified material. Seek medical attention for thermal burns.

Eye Contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses if present and easy to do. Get medical attention if irritation persists.

Ingestion: Rinse mouth. Do NOT induce vomiting. Get medical attention if discomfort occurs.

4.2. Most important symptoms and effects, both acute and delayed

Inhalation of dust may cause respiratory tract irritation. Prolonged or repeated overexposure may lead to lung damage (pneumoconiosis). Thermal decomposition products (hydrogen chloride) are highly irritating to eyes, skin, and respiratory tract.

5. Fire-fighting measures

5.1. Extinguishing media

Suitable Extinguishing Media: Dry powder, carbon dioxide (CO₂), water spray/fog, or foam. Use water spray to disperse dust and prevent dust clouds.

Unsuitable Extinguishing Media: Do not use a solid water jet (straight stream), as it can disperse and spread the dust, potentially creating an explosive dust cloud.

5.2. Special hazards arising from the substance or mixture

Dust Explosion Hazard: Finely dispersed CPVC powder can form explosive mixtures with air.

Self-Extinguishing: CPVC is inherently flame retardant and self-extinguishing due to high chlorine content (63-69%). It will not continue to burn without an external fuel source.

Hazardous Decomposition Products: Thermal decomposition or burning may produce: hydrogen chloride (HCl), carbon monoxide (CO), carbon dioxide (CO₂), chlorinated hydrocarbons, and other toxic and corrosive fumes.

5.3. Advice for fire-fighters

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Wear self-contained breathing apparatus (SCBA) and full protective clothing. Evacuate all personnel from the danger area. Cool fire-exposed containers with water spray. Fight fire from a safe distance and upwind. Hydrogen chloride gas is corrosive; use acid-resistant protective equipment.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For Non-Emergency Personnel: Evacuate area immediately. Isolate immediate hazard area. Eliminate all ignition sources. Use only non-sparking tools.

For Emergency Responders: Wear full protective clothing and NIOSH-approved SCBA.

6.2. Environmental precautions

Prevent entry into drains, sewers, and waterways.

6.3. Methods and material for containment and cleaning up

Do NOT dry sweep. Use only an explosion-proof vacuum cleaner or wet clean (using water or a wetting agent) to minimize dust generation. Place collected material into a clean, closed, and labeled container. Avoid creating dust clouds.

7. Handling and storage

7.1. Precautions for safe handling

Technical Measures: Use explosion-proof local exhaust ventilation and dust collection systems. Ensure all electrical equipment is rated for combustible dust (NFPA 70 Class II, Division 1 or 2).

Preventive Measures: Use non-sparking tools. Bond and ground equipment to prevent static discharge.

Advice on Safe Handling: Avoid formation of dust. Handle in closed, automated systems where possible. CPVC is hygroscopic; minimize exposure to ambient air during handling.

Hygiene Measures: Wash hands after handling. Do not eat, drink, or smoke in work areas.

7.2. Conditions for safe storage, including any incompatibilities

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Store in a cool, dry, well-ventilated area below 40°C in tightly closed original containers. Isolate from: Strong oxidizing agents, strong bases, and moisture. Keep away from heat, sparks, and ignition sources. Use explosion-proof electrical systems in storage areas. Shelf life: 12 months when stored in unopened original packaging under recommended conditions.

8. Exposure controls/personal protection

8.1. Control parameters

Component	Recommended Exposure Limit	Regulatory Limit (China GBZ 2.1)
Inhalable Plastic Dust	3 mg/m ³ (8-hour TWA)	1 mg/m ³ (PC-TWA)
Total Plastic Dust	10 mg/m ³ (8-hour TWA)	5 mg/m ³ (PC-TWA)
Hydrogen Chloride (HCl) (decomposition product)	2 ppm (ceiling)	7.5 mg/m ³ (MAC)

No specific ACGIH or OSHA PEL has been established for CPVC. The above dust values are based on nuisance dust / particle not otherwise regulated (PNOR) limits.

8.2. Exposure controls

Engineering Controls: Provide adequate local exhaust ventilation and general ventilation to maintain airborne dust levels below the occupational exposure limits. Provide explosion-proof dust collection systems.

Respiratory Protection: Wear an N95 or higher particulate respirator if airborne concentrations exceed exposure limits. For high concentrations or potential thermal decomposition, use a full-face powered air-purifying respirator (PAPR) with acid gas cartridges or SCBA.

Hand Protection: Wear nitrile or neoprene gloves.

Eye Protection: Wear chemical safety goggles with side shields.

Skin and Body Protection: Wear antistatic or flame-resistant work clothing. Use disposable coveralls to prevent dust accumulation.

9. Physical and chemical properties

Property	Value
Appearance	White to off-white, free-flowing powder

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Odor	Odorless
Particle Size	Fine powder (typical range: 40 – 200 mesh; specific grade available)
Density	1.53 – 1.58 g/cm ³
Bulk Density	~ 0.50 – 0.70 g/cm ³
Chlorine Content	63 – 69%
Vicat Softening Point	90 – 125°C
Maximum Continuous Use Temperature	~ 110°C
Melting Point / Processing Range	160 – 190°C (decomposes before melting)
Glass Transition Temperature (T _g)	~ 100 – 120°C
Flash Point	Not applicable (self-extinguishing)
Auto-ignition Temperature	> 450°C
Solubility in Water	Insoluble
Solubility in Organic Solvents	Soluble in acetone, chlorobenzene, dichloroethane, THF; good film-forming properties
Volatile Organic Compounds (VOC)	< 0.1%
Water Absorption (24h)	0.02 – 0.08% (moderately hygroscopic)
10. Stability and reactivity	
Property	Information
Reactivity	Stable under normal handling conditions.
Chemical stability	Stable under recommended storage conditions.

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Possibility of hazardous reactions	None under normal use. Avoid contact with strong oxidizing agents and strong bases.
Conditions to avoid	High temperatures (> 190°C), sparks, open flames, dust cloud formation, moisture (hygroscopic).
Incompatible materials	Strong oxidizing agents, strong bases (e.g., sodium hydroxide), and certain solvents.
Hazardous decomposition products	Thermal decomposition (> 190°C) or burning may release: hydrogen chloride (HCl), carbon monoxide (CO), carbon dioxide (CO ₂), chlorinated hydrocarbons, and other toxic and corrosive fumes.
11. Toxicological information	
Property	Information
Acute Toxicity	Expected to be low. LD50 > 5,000 mg/kg (based on similar polymers).
Skin Corrosion/Irritation	Not classified. May cause mechanical irritation.
Serious Eye Damage/Irritation	May cause mechanical irritation (H320).
Respiratory or Skin Sensitization	Not classified. Dust may cause respiratory irritation.
Germ Cell Mutagenicity	Not classified.
Carcinogenicity	IARC: Group 3 (PVC). CPVC itself is not classified as carcinogenic.
STOT – Single Exposure	May cause respiratory irritation (H335).
STOT – Repeated Exposure	Causes damage to lungs through prolonged or repeated inhalation of dust (H372). Prolonged overexposure may cause pneumoconiosis.
Aspiration Hazard	Not classified.
Decomposition Hazard	Thermal decomposition products (hydrogen chloride) are highly corrosive to respiratory tract, eyes, and skin.
12. Ecological information	

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Property	Information
Toxicity	Low acute toxicity to aquatic life. Fine particles may cause physical harm.
Persistence and Degradability	CPVC is not readily biodegradable.
Bioaccumulative potential	Not expected to bioaccumulate.
Mobility in soil	Low mobility (solid particles).
Other adverse effects	Avoid direct release into the environment. Thermal decomposition releases HCl, which contributes to acidification.
13. Disposal considerations	
13.1. Waste treatment methods	
Dispose of in accordance with all local, state, federal, and international environmental regulations. Recycling is recommended where facilities exist. Do not allow dust to enter drains or watercourses. Incineration must be performed in a permitted facility equipped with acid gas scrubbers to capture hydrogen chloride.	
14. Transport information	
Regulation	Information
UN Number	Not regulated (most CPVC powders are not classified as dangerous goods)
Proper Shipping Name	Not regulated
Transport hazard class	Not applicable
Packing group	Not applicable
Marine pollutant	No
Special precautions	Avoid dust formation during transport. Ensure secure stowage.
Note: If the powder is extremely fine (< 100 mesh) and forms combustible dust clouds, consult a dangerous goods professional for potential classification as UN1325.	

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15. Regulatory information

Regulation	Status
TSCA (USA)	Listed
EINECS (EU)	Listed
IECSC (China)	Listed
ENCS (Japan)	Listed
KECI (Korea)	Listed
AICS (Australia)	Listed
RoHS (EU)	Compliant
REACH (EU)	Compliant (SVHC < 0.1%)
California Proposition 65	Not known to contain any Prop 65 listed chemicals above safe harbor levels (in supplied form)
FDA (Food Contact)	Select grades compliant for potable water applications (NSF/ANSI 61)
NSF Certification	Applicable grades certified for potable water and fire sprinkler systems

16. Other information

Key/Legend:

H320: Causes eye irritation.

H335: May cause respiratory irritation.

H372: Causes damage to organs (lungs) through prolonged or repeated exposure (inhalation).

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Processing Note: CPVC is typically processed at 160 – 190°C. Processing temperatures above 200°C may cause significant decomposition and release of hydrogen chloride (HCl). Ensure adequate ventilation and use corrosion-resistant processing equipment. CPVC is self-extinguishing and will not sustain combustion without an external flame source.

Storage Note: CPVC is hygroscopic. Store in sealed original packaging in a cool, dry place below 40°C. Shelf life is typically 12 months when properly stored.

Training Advice: Personnel handling CPVC powder should be trained in combustible dust hazards, proper use of personal protective equipment (PPE), emergency procedures, and the hazards of thermal decomposition products (HCl).

Disclaimer:

The information provided in this Safety Data Sheet is based on our current knowledge and is believed to be accurate as of the revision date. This SDS applies to CPVC powder products supplied by PolymerVerse. It does not constitute a warranty or specification, nor does it replace product-specific SDS for modified or custom grades. Users should conduct their own testing to determine suitability for their specific applications. Processing recommendations are general guidelines; actual conditions may vary based on equipment and formulation. The company shall not be held liable for any damages resulting from handling or from contact with the above product. It is the user's responsibility to comply with all applicable health, safety, and environmental laws and regulations.

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Prepared by: PolymerVerse

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End of Safety Data Sheet

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