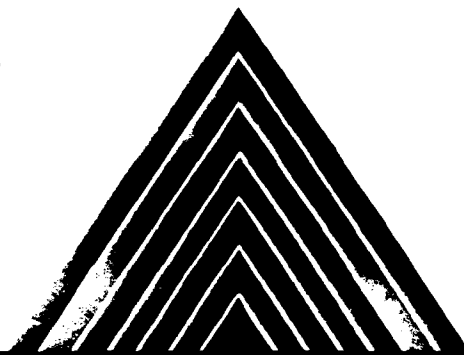




TempRite[®] CPVC



TempRite[®] CPVC RESINS

MATERIAL SAFETY DATA SHEET

MSDS No.: 88016
Issue date: MARCH, 1988
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The data in this bulletin apply to all TempRite[®] CPVC resins.

SECTION I

Manufacturer

The BFGoodrich Company
Specialty Polymers & Chemicals Div.
6100 Oak Tree Blvd.
Cleveland, OH 44131
Telephone: (216) 447-6000

Chemical Name/Synonyms

Chlorinated poly(chloroethene)

CAS Registry No.

68648-82-8

Transportation Emergency

Telephone

CHEMTREC: (800) 424-9300

TOSCA Status

On EPA Inventory of
Chemical Substances

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

TempRite[®] CPVC resins are not considered to be hazardous materials as that term is defined by OSHA in its Hazard Communication Standard (29CFR1910.1200).

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS (Typical data, not specifications)

Solubility in Water

Insoluble

Appearance and Odor

Off-white powder.

Practically odorless

Specific Gravity

1.50-1.60

Other

Partical size: 100% through 22 mesh screen. Characteristics such as boiling point, vapor pressure, vapor density, and evaporation rate are not applicable.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash-Ignition Temp.

~900°F (~482°C)

Self-Ignition Temp.

Not determined

Flammable Limits in Air

(% by volume) Lower: NA

Upper: NA

NA: Not applicable

The BFGoodrich Company, Chemical Group/6100 Oak Tree Blvd., Cleveland, Ohio 44131

BFGoodrich
Specialty Polymers &
Chemicals Division

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Flash-Ignition Temperature is 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.

Extinguishing Media

Water is most effective. ABC dry chemical, AFFF, and protein type air foams are also effective. TempRite[®] CPVC resins are "ordinary combustibles" (NFPA defined Class A). Carbon dioxide is not generally recommended for use on Class A fires as a lack of cooling capacity may result in reignition.

Special Firefighting Procedure

Wear positive pressure self-contained breathing apparatus (SCBA). 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.

Unusual Fire and Explosion Hazards

Hydrogen chloride, a combustion product, has a corrosive effect on many metals. Affected equipment surfaces and unprotected structural elements of buildings should be washed with a detergent based water solution to remove corrosive deposits as soon as possible after depositions have occurred.

SECTION V - REACTIVITY DATA

<u>Stability</u>	<u>Hazardous Polymerization</u>
Stable	Will not occur

Hazardous Decomposition Products (combustion, decomposition)
CO, CO₂, hydrogen chloride, and small amounts of chloroform, carbon tetrachloride, and aromatic and aliphatic hydrocarbons.

Thermal Processing Emissions (extrusion, molding, etc.)
Trace amounts of carbon tetrachloride and chloroform are possible (See Appendix). If decomposition occurs in processing equipment due to hangup or stagnation, trace amounts of hydrogen chloride, an irritant, are possible.

Incompatibility (Conditions/Materials to avoid)
Avoid overheating. Avoid contact with acetal, acetal copolymers and amine containing materials during processing. If processed together, these materials may be mutually destructive and degrade rapidly. Prevent cross contamination of feedstocks. 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 recommendations.

SECTION VI - HEALTH HAZARD DATA

<u>Acute Health Effects</u>	<u>Chronic Health Effects</u>	<u>Routes of Entry</u>
See "Effects" below	None known	Inhalation of dust or processing vapors



Carcinogenicity
Not listed by IARC,
NTP or OSHA.

Medical Conditions Aggravated by Exposure
Individuals with bronchial asthma and other types of chronic obstructive respiratory diseases may develop bronchospasm if exposure (inhalation) is prolonged.

Effects of Overexposure (Signs and Symptoms of Exposure)

- None known or expected at ambient temperature.
NOTE: Routine inhalation of dust of any kind should be avoided. Exercise care when dumping bags, sweeping, mixing or doing other tasks which can create dust. If protection against resin dust is necessary, wear an approved dust respirator (See Section VIII).
- No adverse health effects are expected from processing CPVC resin when potential exposures are eliminated by good industrial hygiene practice and well-ventilated conditions. At processing temperatures, the sum total of all ingredients you add to the resin to make compound (e.g., lubricant, stabilizer, etc.) may emit fumes and vapors that are irritating to the respiratory tract, eyes and/or skin of sensitive people. Typically, these effects are reversible upon removal from exposure and no lasting effects are expected. Most importantly, the potential for irritation will depend on the effectiveness of exhaust ventilation provided to the process area.
- Exposure to decomposition or combustion products, especially hydrogen chloride, will cause irritation of the respiratory tract, eyes and skin.
NOTE: OSHA has established a ceiling limit of 5 ppm for workplace exposure to hydrogen chloride. 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 protective 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.
- Under any condition (processing, decomposition, etc.), symptoms such as coughing, tearing, and irritation should be regarded as potentially hazardous and measures taken to avoid exposure.

Emergency and First Aid Procedure

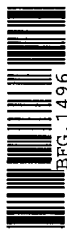
- If irritation persists from exposure to processing vapors or decomposition products, remove the affected individual(s) from the area. Call a physician. Provide protection before allowing reentry.
- For resin as furnished: Eye Contact: Treat as any foreign particulate matter. Skin Contact: Wash skin with soap and water. No effects requiring first aid are expected. Dust Inhalation: Remove individual to fresh air. For any of the above, if irritation develops, see a physician.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND STORAGE

Steps to be taken in case material is released or spilled
Vacuum or sweep into a closed container for reuse or disposal.

Waste Disposal Method

Dispose of waste in a licensed landfill or by incineration in accordance with federal, state and local regulations. For waste disposal purposes, these products are not defined or designated as hazardous by current provisions of the Federal (EPA) Resource Conservation and Recovery Act (RCRA, 40CFR261).



Precautions to be taken in handling and storage

- 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 formulation, amount processed, processing method and temperature and the effectiveness of exhaust ventilation. Always use CPVC resin under well-ventilated conditions and avoid continued or prolonged breathing of process vapors. For personal hygiene, wash thoroughly after processing resin or 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 following normal melt processing should be performed under well-ventilated conditions. CPVC resin-based compound may be held at process temperatures for a short time without significant decomposition. However, recognize that compounds are designed for continuous processing and that exposure to either elevated temperature or excessive heat history (time) will result in decomposition. Equipment should not be shut down for extended time periods with compound in it or decomposition may result leading to possible corrosion of unprotected metal. For shutdown at melt temperatures between 400-430°F (204-221°C), we recommend the use of a purge compound such as acrylic or general purpose ABS (do not use flame-retarded or halogen-containing grades). In case of a power loss or other mishap, dismantling of the die assembly should begin immediately.

Special note: Compound at or above normal processing temperature must never be allowed to accumulate in large masses, or it will begin to decompose internally, and to swell due to internal gassing. Gassing may cause a large mass to explode if its surface is hardened with water. Molten waste should be collected as strands or flattened to 2 inches or less, and quenched in a drum of cold water. Decomposing material should be removed to a well-ventilated area, preferably outdoors.
- Processing fume condensate may include toxic contaminants and should be periodically removed from exhaust hoods, ductwork and other surfaces. Rubber gloves should be worn during cleanup operations to prevent skin contact.
- Sprinklered warehouse areas are recommended. CPVC resin by itself will not support combustion but other combustible contents (e.g. wooden pallets, cardboard boxes, etc.) can provide sufficient fuel to force CPVC to burn.

SECTION VIII - CONTROL MEASURES

Ventilation

Volatiles from processing operations such as extrusion and molding should not be discharged into unventilated work areas. Provide effective exhaust ventilation, including local exhaust when necessary, to draw fumes, vapors or smoke away from workers to prevent routine inhalation. Hot melt processing (e.g. extruding, molding), cutting or sawing, machining, regrinding, heat welding, thermoforming, and other processing or post-processing operations involving heat sufficient to result in polymer breakdown must be examined in ensure well-ventilated conditions.

Ventilation guidelines/techniques may be found in publications such as Industrial Ventilation, 19th Edition, American Conference of Governmental Industrial Hygienists, 6500 Glenway Avenue, Bldg. D-7, Cincinnati, OH 45211-4438 (\$20.00 as of January, 1988).



Respiratory Protection

Not normally necessary. If protection against dust is necessary, wear a particulate respirator approved by NIOSH/MSHA (effective for TLV: 10 mg/m³, nuisance dust). Abnormal conditions such as equipment malfunction, use of improper equipment or procedures, or hangup or stagnation during processing may cause decomposition. If general dilution or local exhaust ventilation is not adequate to keep fume or vapor concentrations at nonirritating levels, then employees involved in removing decomposing material must be provided with suitable air supplied respirators, such as NIOSH/MSHA approved positive pressure self-contained breathing apparatus.

Protective Equipment

- Safety glasses.
- Protective gloves for handling hot material during processing.

SECTION IX - TRANSPORTATION

For domestic transportation purposes, these products are not defined or designated as a hazardous material by the U.S. Department of Transportation under Title 49 of the Code of Federal Regulations, 1986 Edition.

- DOT Proper Shipping Name: Not Applicable
- DOT Hazard Class:..... Not Applicable
- DOT Label:..... Not Applicable
- UN/NA Hazard No.:..... Not Applicable
- Reportable Quantity (RQ): Not Applicable

SECTION X - HAZARD CODES

NFPA 704*

Health: 2
Flammability: 1
Reactivity: 0
Special: None

HMIS**

Health: 0
Flammability: 1
Reactivity: 0
Personal Protection: B

Key: 0 = insignificant; 1 = slight; 2 = moderate; 3 = high; 4 = extreme.

* National Fire Protection Association rating identifies the severity of hazards of material during a fire emergency (i.e., "on fire").

** Hazardous Materials Identification System, National Paint and Coatings Assn. rating applies to product "as packaged" (i.e., ambient temp.).

USER'S RESPONSIBILITY

This bulletin cannot cover all possible situations which the user may experience during processing. Each aspect of your operation should be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained in this bulletin should be provided to your employees or customers. It is your responsibility to use this information to develop appropriate work practice guidelines and employee instructional programs for your operation.



APPENDIX

Less than 0.02% (<200 ppm) of residual chloroform and less than 0.01% (<100 ppm) of residual carbon tetrachloride may remain bound in CPVC resin. The American Conference of Governmental Industrial Hygienists identifies these chemicals as cancer suspect agents and has established a "TLV-TWA" (Threshold Limit Value-Time Weighted Average) of 10 ppm for chloroform and 5 ppm for carbon tetrachloride. The TLV-TWA is defined as the time-weighted average concentration for a normal eight hour workday and a 40-hour workweek to which nearly all workers may be repeatedly exposed, day after day, without adverse effect. The presence of these residual chemicals in TempRite[®] CPVC is not expected to create any hazard. In a well-ventilated workplace, the potential concentration of chloroform or carbon tetrachloride will be well below established threshold limit values. Monitoring of BFGoodrich CPVC production facilities show chloroform levels to be below 0.00003% (<0.3 ppm) and carbon tetrachloride levels to be below 0.00005% (<0.5 ppm) in the workplace air. These levels are 1/10 or less of the established exposure limits. BFGoodrich production workers are not required to wear special respiratory protection.

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