



MATERIAL SAFETY DATA SHEET

NUMBER

159

(Approved by U.S. Department of Labor as "essentially similar" to FORM OSHA-20)

SECTION I IDENTIFICATION OF PRODUCT

MANUFACTURER'S NAME Tenneco Chemicals, Inc., ORGANICS & POLYMERS DIVISION		EMERGENCY TELEPHONE NO. 609 386-9200
ADDRESS TURNER PLACE, P.O. BOX 365, PISCATAWAY, NEW JERSEY 08854		
TRADE NAME AND SYNONYMS Tenneco PVC Copolymer Dispersion Resin 0565		
CHEMICAL NAME AND SYNONYMS Vinylchloride - Vinyl Acetate Copolymer, VC/Vac Copolymer		
CHEMICAL FAMILY Chlorohydrocarbon copolymer	MOLECULAR FORMULA $\{CH_2CHCl\}_x\{CH_2CHOCOCH_3\}_y$	MOL. WT. 35-60,000

SECTION II HAZARDOUS COMPONENTS OF MIXTURES

COMPONENT	%	THRESHOLD LIMIT VALUE	COMPONENT	%	THRESHOLD LIMIT VALUE
OSHA Standard 1910.93 (.1017) on vinyl chloride sets a permissible exposure limit of 1 ppm averaged over any 8 hour period and 5 ppm over any 15 minute period. On the basis that polyvinyl chloride may contain and release small amounts of monomer, the Standard applies to the manufacture, reaction, packaging, repackaging, storage, handling, use or transportation of PVC, but not to handling or use of "fabricated products", as defined, if not subject to processing sufficient in time or temperature to cause mass melting.					

SECTION III PHYSICAL DATA

APPEARANCE AND ODOR White powder, faint ester odor.	
BOILING POINT (DEGREES FAHRENHEIT) Not applicable	MELTING POINT (DEGREES FAHRENHEIT) Not applicable. Softens about 140-160°F
VAPOR PRESSURE (MM OF MERCURY) Not applicable	SPECIFIC GRAVITY (WATER = 1) 1.4
VAPOR DENSITY (AIR = 1) Not applicable	PERCENT VOLATILE (BY WEIGHT) Approx. 1% (MOISTURE)
SOLUBILITY IN WATER Negligible	EVAPORATION RATE (BUTYL ACETATE = 1) Not applicable

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (SPECIFY METHOD) (DEGREES FAHRENHEIT) for PVC (ASTM D-1929) Ignition about 735°F	FLAMMABLE LIMITS (PERCENT BY VOLUME) LOWER Not applicable	UPPER
FIRE EXTINGUISHING MEDIA Water spray, carbon dioxide or dry chemical.		
SPECIAL FIRE-FIGHTING PROCEDURES Water spray or fog may be helpful in reducing flame intensity and absorbing irritating fumes.		
UNUSUAL FIRE AND EXPLOSION HAZARDS NFPA lists ignition temperature of 1274°F. for dust cloud. Produces combustible gases above 570°F. Fire conditions produce hydrogen chloride, requiring protective equipment.		

TENO 142

This information is furnished without warranty, representation, inducement or license of any kind, except that it is accurate to the best of Tenneco Chemicals, Inc.'s knowledge and belief, and Tenneco Chemicals, Inc. does not assume any legal liability for its use.

SECTION V HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

SEE SECTION II

EFFECTS OF OVEREXPOSURE None expected - inert resin. See Section IX. Prolonged breathing of concentrated dust may be harmful. (Processing at high temperatures produces fumes irritating to eyes and respiratory tract requiring local exhaust.)

EMERGENCY AND FIRST AID PROCEDURES

Ordinary measures of personal hygiene.

In case of exposure in hot processing move to fresh air, flush eyes with water.

SECTION VI REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID Normal processing temperature, about 350°F, causes slow darkening and decomposition. Higher heat increases rate and evolution of HCl.
	STABLE	X	

INCOMPATIBILITY (Materials to avoid)

None in ordinary use. Soluble in certain ketones and organic solvents.

HAZARDOUS DECOMPOSITION PRODUCTS

Thermal decomposition produces HCl, and CO and CO₂ (above 570°F)

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID None in ordinary use.
	WILL NOT OCCUR	X	

SECTION VII SPILL OR LEAK PROCEDURES

STeps TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Sweep up and remove to disposal container.

WASTE DISPOSAL METHOD

Bury in an approved landfill.

SECTION VIII SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type) In case of concentrated dust, use Bureau of Mines approved dust respirator (NIOBM TC-21C-132 or equivalent). See Sections II and IX.

VENTILATION	LOCAL EXHAUST For hot processing.	SPECIAL Vent to elevated stack.
	MECHANICAL (General) For ordinary handling.	OTHER Ventilate enclosed spaces.

PROTECTIVE GLOVES Not ordinarily required	EYE PROTECTION Safety glasses
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OTHER PROTECTIVE EQUIPMENT None required for ordinary handling. For hot processing local exhaust, safety glasses and gloves are recommended.

SECTION IX SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

OSHA Standard 1910.93_q (.1017) requires monitoring and other precautions in storage, handling and use of polyvinyl chloride, and also labeling of PVC "Contains Vinyl Chloride--Vinyl Chloride is a Cancer-Suspect Agent."

New PVC resins with a low monomer content make it easier to operate below the OSHA action level of 0.5 ppm in a processor's work area, assuming normal conditions and ventilation, simplifying compliance with some of the regulatory requirements. Further developments on resins and on regulations are pending.

DATE
6/5/75

NAME AND TITLE
T. R. AALTO, MANAGER, PRODUCT SAFETY SERVICES

ITEM NO 143
SHEET NUMBER
159



MATERIAL SAFETY DATA SHEET

NUMBER

158

(Approved by U.S. Department of Labor as "essentially similar" to FORM OSHA-20)

SECTION I IDENTIFICATION OF PRODUCT

MANUFACTURER'S NAME Tenneco Chemicals, Inc., ORGANICS & POLYMERS DIVISION		EMERGENCY TELEPHONE NO. 609 386-9200 201 782-4011
ADDRESS TURNER PLACE, P.O. BOX 365, PISCATAWAY, NEW JERSEY 08854		
TRADE NAME AND SYNONYMS 314, 315, 382, 388, 389, 390, 391, 521 Tenneco PVC Copolymer Resin		
CHEMICAL NAME AND SYNONYMS Vinylchloride - Vinyl Acetate Copolymer, VC/VAc Copolymer		
CHEMICAL FAMILY Chlorohydrocarbon copolymer	MOLECULAR FORMULA $\{CH_2CHCl\}_x\{CH_2CHOCOCH_3\}_y$	MOL. WT. 20-60,000

SECTION II HAZARDOUS COMPONENTS OF MIXTURES

COMPONENT	%	THRESHOLD LIMIT VALUE	COMPONENT	%	THRESHOL LIMIT VALUE
OSHA Standard 1910.93 ^q (.1017) on vinyl chloride sets a permissible exposure limit of 1 ppm averaged over any 8 hour period and 5 ppm over any 15 minute period. On the basis that polyvinyl chloride may contain and release small amounts of monomer, the Standard applies to the manufacture, reaction, packaging, repackaging, storage, handling, use or transportation of PVC, but not to handling or use of "fabricated products", as defined, if not subject to processing sufficient in time or temperature to cause mass melting.					

SECTION III PHYSICAL DATA

APPEARANCE AND ODOR White powder, faint ester odor	
BOILING POINT (DEGREES FAHRENHEIT) Not applicable	MELTING POINT (DEGREES FAHRENHEIT) Not applicable. Softens about 140-160°F
VAPOR PRESSURE (MM. OF MERCURY) Not applicable	SPECIFIC GRAVITY (WATER = 1) 1.35 - 1.4
VAPOR DENSITY (AIR = 1) Not applicable	PERCENT VOLATILE (BY WEIGHT) Approx. 1% (moisture)
SOLUBILITY IN WATER Negligible	EVAPORATION RATE (BUTYL ACETATE = 1) Not applicable

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (SPECIFY METHOD) (DEGREES FAHRENHEIT) for PVC (ASTM D-1929) Ignition about 735°F	FLAMMABLE LIMITS (PERCENT BY VOLUME) LOWER UPPER Not applicable
FIRE EXTINGUISHING MEDIA Water spray, carbon dioxide or dry chemical.	
SPECIAL FIRE-FIGHTING PROCEDURES Water spray or fog may be helpful in reducing flame intensity and absorbing irritating fumes.	
UNUSUAL FIRE AND EXPLOSION HAZARDS NFPA lists ignition temperature of 1274°F. for dust cloud. Produces combustible gases above 570°F. Fire conditions produce hydrogen chloride, requiring protective equipment.	

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SECTION V HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

SECTION II

EFFECTS OF OVEREXPOSURE None expected - inert resin. See Section IX. Prolonged breathing of concentrated dust may be harmful. (Processing at high temperatures produces fumes irritating to eyes and respiratory tract requiring local exhaust.)

EMERGENCY AND FIRST AID PROCEDURES

Ordinary measures of personal hygiene.

In case of exposure in hot processing move to fresh air, flush eyes with water.

SECTION VI REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID Normal processing temperature, about 350°F, causes slow darkening and decomposition. Higher heat increases rate and evolution of HCl.
	STABLE	X	

INCOMPATIBILITY (Materials to avoid)

None in ordinary use. Soluble in certain ketones and organic solvents.

HAZARDOUS DECOMPOSITION PRODUCTS

Thermal decomposition produces HCl, and CO and CO₂ (above 570°F)

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID None in ordinary use.
	WILL NOT OCCUR	X	

SECTION VII SPILL OR LEAK PROCEDURES

STeps TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Sweep up and remove to disposal container.

WASTE DISPOSAL METHOD

Bury in an approved landfill.

SECTION VIII SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type) In case of concentrated dust, use Bureau of Mines approved dust respirator (NIOBM TC-21C-132 or equivalent). See Sections II and IX.

VENTILATION	LOCAL EXHAUST For hot processing	SPECIAL Vent to elevated stack.
	MECHANICAL (General) For ordinary handling.	OTHER Ventilate enclosed spaces.

PROTECTIVE GLOVES Not ordinarily required	EYE PROTECTION, Safety glasses
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OTHER PROTECTIVE EQUIPMENT None required for ordinary handling. For hot processing local exhaust, safety glasses and gloves are recommended.

SECTION IX SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

OSHA Standard 1910.93_q (.1017) requires monitoring and other precautions in storage, handling and use of polyvinyl chloride, and also labeling of PVC "Contains Vinyl Chloride--Vinyl Chloride is a Cancer-Suspect Agent."

DATE
1/15/75

NAME AND TITLE
T. R. AATTO, MANAGER, PRODUCT SAFETY SERVICES

1EN0145
SHEET NUMBER
158



MATERIAL SAFETY DATA SHEET

157

(Approved by U.S. Department of Labor as "essentially similar" to FORM OSHA-20)

SECTION I IDENTIFICATION OF PRODUCT

MANUFACTURER'S NAME Tenneco Chemicals, Inc., ORGANICS & POLYMERS DIVISION		EMERGENCY TELEPHONE NO. 609 386-9200
ADDRESS TURNER PLACE, P.O. BOX 365, PISCATAWAY, NEW JERSEY 08854		
TRADE NAME AND SYNONYMS Tenneco PVC Dispersion Resin 1716, 1730, 1732, 1738, 1742, 1750, 1755, 1756, 1757		
CHEMICAL NAME AND SYNONYMS Poly(Vinyl Chloride), PVC		
CHEMICAL FAMILY Chlorohydrocarbon Polymer	MOLECULAR FORMULA (CH₂CHCl)_n	MOL. WT. 40-60,000

SECTION II HAZARDOUS COMPONENTS OF MIXTURES

COMPONENT	%	THRESHOLD LIMIT VALUE	COMPONENT	%	THRESHOL LIMIT VALUE
OSHA Standard 1910.93 (.1017) on vinyl chloride sets a permissible exposure limit of 1 ppm averaged over any 8 hour period and 5 ppm over any 15 minute period. On the basis that polyvinyl chloride may contain and release small amounts of monomer, the Standard applies to the manufacture, reaction, packaging, repackaging, storage, handling, use or transportation of PVC, but not to handling or use of "fabricated products", as defined, if not subject to processing sufficient in time or temperature to cause mass melting.					

SECTION III PHYSICAL DATA

APPEARANCE AND ODOR White powder, Odorless.	
BOILING POINT (DEGREES FAHRENHEIT) Not applicable	MELTING POINT (DEGREES FAHRENHEIT) Not applicable. Softens about 160-180°F
VAPOR PRESSURE (MM. OF MERCURY) Not applicable	SPECIFIC GRAVITY (WATER = 1) 1.4
VAPOR DENSITY (AIR = 1) Not applicable	PERCENT VOLATILE (BY WEIGHT) Approximately 1% (moisture)
SOLUBILITY IN WATER Negligible	EVAPORATION RATE (BUTYL ACETATE = 1) Not applicable

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (SPECIFY METHOD) (DEGREES FAHRENHEIT) Ignition about 735°F Auto ignition about 850°F (ASTM-1929)	FLAMMABLE LIMITS (PERCENT BY VOLUME) Not applicable	LOWER	UPPER
FIRE EXTINGUISHING MEDIA Water spray, carbon dioxide or dry chemical.			
SPECIAL FIRE-FIGHTING PROCEDURES Water spray or fog may be helpful in reducing flame intensity and absorbing irritating fumes.			
UNUSUAL FIRE AND EXPLOSION HAZARDS NFPA lists ignition temperatures of 752°F for layer and 1220°F for PVC dust cloud. above 570°F. Fire conditions produce hydrogen chloride, requiring protective equipment. Produces combustible gases			

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SECTION V HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

SEE SECTION II

EFFECTS OF OVEREXPOSURE None expected - inert resin. See Section IX. Prolonged breathing of concentrated dust may be harmful. (Processing at high temperatures produces fumes irritating to eyes and respiratory tract requiring local exhaust.)

EMERGENCY AND FIRST AID PROCEDURES

Ordinary measures of personal hygiene.

In case of exposure in hot processing move to fresh air, flush eyes with water.

SECTION VI REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID Normal processing temperature, about 350°F, causes slow darkening and decomposition. Higher heat increases rate and evolution of HCl.
	STABLE	x	
INCOMPATIBILITY (Materials to avoid)			
None in ordinary use. Soluble in certain ketones and organic solvents.			
HAZARDOUS DECOMPOSITION PRODUCTS			
Thermal decomposition produces HCl, and CO and CO ₂ (above 570°F)			
HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	x	
None in ordinary use.			

SECTION VII SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Sweep up and remove to disposal container.

WASTE DISPOSAL METHOD

Bury in an approved landfill.

SECTION VIII SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type) In case of concentrated dust, use Bureau of Mines approved dust respirator (NIOBM TC-21C-132 or equivalent). See Sections II and IX.

VENTILATION	LOCAL EXHAUST	SPECIAL
	MECHANICAL (General)	OTHER
	For hot processing.	Vent to elevated stack.
	For ordinary handling.	Ventilate enclosed spaces.
PROTECTIVE GLOVES		EYE PROTECTION
Not ordinarily required		Safety glasses
OTHER PROTECTIVE EQUIPMENT None required for ordinary handling. For hot processing local exhaust, safety glasses and gloves are recommended.		

SECTION IX SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

OSHA Standard 1910.93 (.1017) requires monitoring and other precautions in storage, handling and use of polyvinyl chloride, and also labeling of PVC "Contains Vinyl Chloride--Vinyl Chloride is a Cancer-Suspect Agent."

New PVC resins with a low monomer content make it easier to operate below the OSHA action level of 0.5 ppm in a processor's work area, assuming normal conditions and ventilation, simplifying compliance with some of the regulatory requirements. Further developments on resins and on regulations are pending.

TENO 147

DATE	NAME AND TITLE	SHEET NUMBER
6/5/75	T. R. AALTO, MANAGER, PRODUCT SAFETY SERVICES	157



MATERIAL SAFETY DATA SHEET

156

(Approved by U.S. Department of Labor as "essentially similar" to FORM OSHA-20)

SECTION I IDENTIFICATION OF PRODUCT

MANUFACTURER'S NAME Tenneco Chemicals, Inc., ORGANICS & POLYMERS DIVISION		EMERGENCY TELEPHONE NO. 609 386-9200 713 479-3411
ADDRESS TURNER PLACE, P.O. BOX 365, PISCATAWAY, NEW JERSEY 08854		
TRADE NAME AND SYNONYMS Tenneco PVC Resin 175,200-2, 225, 225 PG, 250, 250-3, 10R, 501		
CHEMICAL NAME AND SYNONYMS Poly(Vinyl Chloride), PVC Homopolymer		
CHEMICAL FAMILY Chlorohydrocarbon Polymer	MOLECULAR FORMULA (CH₂CHCl)_n	MOL. WT. <i>Don Goodman - 25-80,000</i>

SECTION II HAZARDOUS COMPONENTS OF MIXTURES

COMPONENT	%	THRESHOLD LIMIT VALUE	COMPONENT	%	THRESHOL LIMIT VALUE
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SECTION III PHYSICAL DATA

APPEARANCE AND ODOR White powder, odorless	
BOILING POINT (DEGREES FAHRENHEIT) Not applicable	MELTING POINT (DEGREES FAHRENHEIT) Not applicable. Softens about 160-180°F.
VAPOR PRESSURE (MM OF MERCURY) Not applicable	SPECIFIC GRAVITY (WATER = 1) 1.4
VAPOR DENSITY (AIR = 1) Not applicable	PERCENT VOLATILE (BY WEIGHT) Approx. 1% (Moisture)
SOLUBILITY IN WATER Negligible	EVAPORATION RATE (BUTYL ACETATE = 1) Not applicable

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (SPECIFY METHOD) (DEGREES FAHRENHEIT) Auto-ignition about 850°F (ASTM D-1929)	FLAMMABLE LIMITS (PERCENT BY VOLUME) Not applicable	LOWER	UPPER
FIRE EXTINGUISHING MEDIA Water spray, carbon dioxide or dry chemical.			
SPECIAL FIRE-FIGHTING PROCEDURES Water spray or fog may be helpful in reducing flame intensity and absorbing irritating fumes.			
UNUSUAL FIRE AND EXPLOSION HAZARDS NFPA lists ignition temperatures of 752°F for layer and 1220°F for PVC dust cloud. Produces combustible gases above 570°F. Fire conditions produce hydrogen chloride, requiring protective equipment.			

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SECTION V HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

SEE SECTION II

EFFECTS OF OVEREXPOSURE None expected - inert resin. See Section IX. Prolonged breathing of concentrated dust may be harmful. (Processing at high temperatures produces fumes irritating to eyes and respiratory tract requiring local exhaust.)

EMERGENCY AND FIRST AID PROCEDURES

Ordinary measures of personal hygiene.

In case of exposure in hot processing move to fresh air, flush eyes with water.

SECTION VI REACTIVITY DATA

STABILITY	UNSTABLE	x	CONDITIONS TO AVOID Normal processing temperature, about 350°F, causes slow darkening and decomposition. Higher heat increases rate and evolution of HCl.
	STABLE		

INCOMPATIBILITY (Materials to avoid)

None in ordinary use. Soluble in certain ketones and organic solvents.

HAZARDOUS DECOMPOSITION PRODUCTS

Thermal decomposition produces HCl, and CO and CO₂ (above 570°F)

HAZARDOUS POLYMERIZATION	MAY OCCUR	x	CONDITIONS TO AVOID None in ordinary use.
	WILL NOT OCCUR		

SECTION VII SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Sweep up and remove to disposal container.

WASTE DISPOSAL METHOD

Bury in an approved landfill.

SECTION VIII SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type) In case of concentrated dust, use Bureau of Mines approved dust respirator (NIOBM TC-21C-132 or equivalent). See Sections II and IX.

VENTILATION	LOCAL EXHAUST For hot processing.	SPECIAL Vent to elevated stack.
	MECHANICAL (General) For ordinary handling.	OTHER Ventilate enclosed spaces.

PROTECTIVE GLOVES Not ordinarily required	EYE PROTECTION Safety glasses
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OTHER PROTECTIVE EQUIPMENT None required for ordinary handling. For hot processing local exhaust, safety glasses and gloves are recommended.

SECTION IX SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

OSHA Standard 1910.93_g (.1017) requires monitoring and other precautions in storage, handling and use of polyvinyl chloride, and also labeling of PVC "Contains Vinyl Chloride--Vinyl Chloride is a Cancer-Suspect Agent."

New PVC resins with a low monomer content make it easier to operate below the OSHA action level of 0.5 ppm in a processor's work area, assuming normal conditions and ventilation, simplifying compliance with some of the regulatory requirements. Further developments on resins and on regulations are pending.

DATE 6/5/75	NAME AND TITLE T. R. AALTO, MANAGER, PRODUCT SAFETY SERVICES
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IEN0149
SHEET NUMBER