



Tenneco Polymers
A Tenneco Company

NUMBER

MATERIAL SAFETY DATA

156

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

SECTION I IDENTIFICATION OF PRODUCT

MANUFACTURER'S NAME TENNECO POLYMERS, INC., RESEARCH & DEVELOPMENT		EMERGENCY TELEPHONE NO. 609-386-9200 713-479-3411
ADDRESS RIVER ROAD, P.O. BOX 129, FLEMINGTON, NEW JERSEY 08822		
TRADE NAME AND SYNONYMS TENNECO PVC RESIN 175, 185, 190, 195, 200, 225, 225F, 225PG, 225SG, 250, 250-3, 10R, 501, 530, 540		
CHEMICAL NAME AND SYNONYMS POLY(VINYL CHLORIDE), PVC HOMOPOLYMER		
CHEMICAL FAMILY CHLOROHYDROCARBON POLYMER	MOLECULAR FORMULA (CH₂CHCl)_n	
		MOL WT

SECTION II HAZARDOUS COMPONENTS OF MIXTURES

COMPONENT	%	THRESHOLD LIMIT VALUE	COMPONENT	%	THRESHOLD LIMIT VALUE
OSHA Standard 1910.93q(.1017) on vinyl chloride sets a permissible exposure limit of 1ppm averaged over any 8 hr. period and 5ppm over any 15 min. 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) Approx. 1% (Moisture)
SOLUBILITY IN WATER Negligible	EVAPORATION RATE (BUTYLACETATE = 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 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 725°F for layer and 1220°F for PVC dust cloud. Produces combustible gases above 570°F. Fire conditions produce hydrogen chloride, requiring protective equipment.			

This information is furnished without warranty, representation, inducement or license of any kind, except that it is accurate to the best of Tenneco Polymers' knowledge or obtained from sources believed by Tenneco Polymers to be accurate and Tenneco Polymers does not assume any legal responsibility for use or reliance upon same. Customers are encouraged to conduct their own tests. Before using any product read its label.

TEN00 86

TPOL 25 48

SECTION V HEALTH HAZARD DATA**THRESHOLD LIMIT VALUE**

See Section II

EFFECTS ON 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 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 1910.93q(.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 0.5ppm 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.

TEN00 87

DATE

3/12/84

NAME AND TITLE

D. GOODMAN, PRODUCT REGULATIONS

SHEET NUMBER

156



Tenneco Polymers
A Tenneco Company

NUMBER

157

MATERIAL SAFETY DATA

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

SECTION I IDENTIFICATION OF PRODUCT	
MANUFACTURER'S NAME TENNECO POLYMERS, INC., RESEARCH & DEVELOPMENT	EMERGENCY TELEPHONE NO. 609-386-9200
ADDRESS RIVER ROAD, P.O. BOX 129, FLEMINGTON, NEW JERSEY 08822	
TRADE NAME AND SYNONYMS TENNECO PVC DISPERSION RESIN 1716, 1730, 1732, 1735, 1738, 1742, 1750, 1755, 1756, 1757, 1759	
CHEMICAL NAME AND SYNONYMS POLY(VINYL CHLORIDE) PVC	
CHEMICAL FAMILY CHLOROHYDROCARBON POLYMER	MOLECULAR FORMULA (CH₂CHCl)_n MOL WT

SECTION II HAZARDOUS COMPONENTS OF MIXTURES					
COMPONENT	%	THRESHOLD LIMIT VALUE	COMPONENT	%	THRESHOLD LIMIT VALUE
OSHA Standard 1910.93q(.1017) on vinyl chloride sets a permissible exposure limit of 1ppm averaged over any 8 hr. period and 5ppm over any 15 minute period. On the basis that polyvinyl chloride may contain and release small amounts of monomer, the Standard applied 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 (BUTYLACETATE = 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. Produces combustible gases above 570°F. Fire conditions produce hydrogen chloride, requiring protective equipment. TEN00 88		

SECTION V HEALTH HAZARD DATA**THRESHOLD LIMIT VALUE**

See Section II

EFFECTS ON 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 PRODUCTSThermal decomposition produces HCl, and CO and CO₂ (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 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 1910.93q(.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 0.5ppm 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.

TEN00 89

DATE 3/12/84

NAME AND TITLE

D. GOODMAN, PRODUCT REGULATIONS

SHEET NUMBER

157



Tenneco Polymers
A Tenneco Company

NUMBER

158

MATERIAL SAFETY DATA

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

SECTION I IDENTIFICATION OF PRODUCT	
MANUFACTURER'S NAME TENNECO POLYMERS, INC., RESEARCH & DEVELOPMENT	EMERGENCY TELEPHONE NO. 609-386-9200 201-782-4011
ADDRESS RIVER ROAD, P.O. BOX 129, FLEMINGTON, NEW JERSEY 08822	
TRADE NAME AND SYNONYMS TENNECO PVC COPOLYMER RESIN 305, 314, 315, 318, 382, 388, 389, 390, 391, 400, 521	
CHEMICAL NAME AND SYNONYMS VINYLCHELORIDE - VINYL ACETATE COPOLYMER, VC/VAc COPOLYMER	
CHEMICAL FAMILY CHLOROHECROBACON COPOLYMER	MOLECULAR FORMULA {CH₂CHCl}_x{CH₂CHOCOCH₃}_y MOL. WT

SECTION II HAZARDOUS COMPONENTS OF MIXTURES					
COMPONENT	%	THRESHOLD LIMIT VALUE	COMPONENT	%	THRESHOLD LIMIT VALUE
(UNITS)					
OSHA Standard 1910.93q(.1017) on vinyl chloride sets a permissible exposure limit of 1ppm averaged over any 8 hr. period and 5ppm 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.					
(UNITS)					

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) Approximately 1% (moisture)
SOLUBILITY IN WATER Negligible	EVAPORATION RATE (BUTYLACETATE = 1) Not applicable

SECTION IV FIRE AND EXPLOSION HAZARD DATA	
FLASH POINT (SPECIFY METHOD) (DEGREES FAHRENHEIT) Ignition about 735°F for PVC (ASTM D-1929).	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.	

This information is furnished without warranty, representation, inducement or license of any kind, except that it is accurate to the best of Tenneco Polymers' knowledge or obtained from sources believed by Tenneco Polymers to be accurate and Tenneco Polymers does not assume any legal responsibility for use or reliance upon same. Customers are encouraged to conduct their own tests. Before using any product read its label.

TEN00 90

TPOL 25 483

SECTION V HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

See Section II

EFFECTS OR 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 respiratory (NIOBM TC-21C-132 or equivalent). See Section 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.
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 1910.93q(.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 0.5ppm 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.

TEN00 91



Tenneco Polymers
A Tenneco Company

NUMBER

MATERIAL SAFETY DATA

159

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

SECTION I IDENTIFICATION OF PRODUCT	
MANUFACTURER'S NAME TENNECO POLYMERS, INC., RESEARCH & DEVELOPMENT	EMERGENCY TELEPHONE NO. 609-386-9200
ADDRESS RIVER ROAD, P.O. BOX 129, FLEMINGTON, NEW JERSEY 08822	
TRADE NAME AND SYNONYMS TENNECO PVC COPOLYMER DISPERSION RESIN 0565, 0665 (0565-1)	
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.

SECTION II HAZARDOUS COMPONENTS OF MIXTURES					
COMPONENT	%	THRESHOLD LIMIT VALUE	COMPONENT	%	THRESHOLD LIMIT VALUE
OSHA Standard 1910.93q(.1017) on vinyl chloride sets a permissible exposure limit of 1ppm averaged over any 8 hr. period and 5ppm 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) Approximately 1% (Moisture)
SOLUBILITY IN WATER Negligible	EVAPORATION RATE (BUTYLACETATE = 1) Not applicable

SECTION IV FIRE AND EXPLOSION HAZARD DATA	
FLASH POINT (SPECIFY METHOD) (DEGREES FAHRENHEIT) Ignition about 735°F for PVC (ASTM D-1929)	FLAMMABLE LIMITS (PERCENT BY VOLUME) 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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TEN0092

SECTION V HEALTH HAZARD DATA**THRESHOLD LIMIT VALUE**

See Section II

EFFECTS OR 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 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 respiratory (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.
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 1910.93q(.1017) requires monitoring and other precautions in storage, handling and use of polyvinyl chloride, and also labeling 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 0.5ppm 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.

TEN00 93

DATE 3/12/84	NAME AND TITLE D. GOODMAN, PRODUCT REGULATIONS	SHEET NUMBER 150
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**MATERIAL SAFETY DATA**

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

SECTION I IDENTIFICATION OF PRODUCT	
MANUFACTURER'S NAME TENNECO POLYMERS, INC., RESEARCH & DEVELOPMENT	EMERGENCY TELEPHONE NO 609-386-9200
ADDRESS RIVER ROAD, P.O. BOX 129, FLEMINGTON, NEW JERSEY 08822	
TRADE NAME AND SYNONYMS WIRE & 2022, 2022A, 2024, 2025, 2052, 2060, 2300, 2385, 2580, TENNECO PVC COMPOUND, CABLE 2700, 2710C, 2710C4, 2712, 2714, 2730, 2775, 2780, 2800,	
CHEMICAL NAME AND SYNONYMS 2803, 2804, 2814, 2814-1F, 2820, 2825, 2826, 2880, 2900, 2901-1, POLY(VINYL CHLORIDE) COMPOUND, PLASTICIZED (FLEXIBLE) 2905, 2908, 2914, 2922, 2951	
CHEMICAL FAMILY CHLOROHYDROCARBON POLYMER	MOLECULAR FORMULA (CH₂CHCl)_n

SECTION II HAZARDOUS COMPONENTS OF MIXTURES					
COMPONENT	%	THRESHOLD LIMIT VALUE	COMPONENT	%	THRESHOLD LIMIT VALUE
Antimony Compound (0-2.5%)	-	0.5 mg/m ³ (UNITS)	Diglycidyl Ether (0-0.2%)	-	0.5 (UNITS)
Barium Compounds (0-0.8%)	-	0.5 mg/m ³	Lead Compounds (0-6.0%)	-	0.2 mg/m ³
Carbon Black (0-1.2%)	-	3.5 mg/m ³	Mineral Oil (0-0.3%)	-	5 mg/m ³
Diethylhexyl Phthalate (0-30%)	-	5.0 mg/m ³	Titanium Dioxide (0-7.0%)	-	15 mg/m ³

SECTION III PHYSICAL DATA	
APPEARANCE AND ODOR Colorless, white, black or colored pellets, practically 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) 1.22 - 1.48
VAPOR DENSITY (AIR = 1) Not applicable	PERCENT VOLATILE (BY WEIGHT) Essentially non-volatile
SOLUBILITY IN WATER Negligible	EVAPORATION RATE (BUTYLACETATE = 1) Not applicable

SECTION IV FIRE AND EXPLOSION HAZARD DATA	
FLASH POINT (SPECIFY METHOD) (DEGREES FAHRENHEIT) Not applicable Plasticizer generally over 400°F, COC	FLAMMABLE LIMITS (PERCENT BY VOLUME) 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. Shut off current in electrical equipment or wiring.	
UNUSUAL FIRE AND EXPLOSION HAZARDS NFPA lists ignition temperature of 608°F for PVC plasticizer dust cloud and minimum concentration of 0.035 oz/cu. ft. Fire conditions produce hydrogen chloride, requiring protective equipment.	

TEN00 94

SECTION V HEALTH HAZARD DATA**THRESHOLD LIMIT VALUE**

See Section II

EFFECTS OR OVEREXPOSURE

None expected in normal handling. (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. (See Section IX).

(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 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)**

None required in ordinary handling. See Section IX.

VENTILATION	LOCAL EXHAUST For hot processing.	SPECIAL Vent to stack or scrubber.
	MECHANICAL (General) For ordinary handling.	OTHER Ventilate enclosed spaces.
PROTECTIVE GLOVES Cotton gloves for hot processing.		EYE PROTECTION 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 1910.93q(.1017) on vinyl chloride limits exposure to 1ppm (8 hr av.) and requires monitoring and other precautions in storage, handling and use of polyvinyl chloride, including labeling "Contains Vinyl Chloride - Vinyl Chloride is a Cancer-Suspect Agent", excepting "fabricated products" not subject to "mass melting", as defined. New, low monomer content PVC compounds simplify operation below the OSHA 0.5ppm action level and compliance, assuming normal conditions and ventilation in a processor's work area. Further developments on resins and regulations are pending.

TEN00 95

DATE 3/12/84	NAME AND TITLE D. GOODMAN, PRODUCT REGULATIONS	SHEET NUMBER 166
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Tenneco Polymers
A Tenneco Company

NUMBER

167

MATERIAL SAFETY DATA

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

SECTION I IDENTIFICATION OF PRODUCT	
MANUFACTURER'S NAME TENNECO POLYMERS, INC., RESEARCH AND DEVELOPMENT	EMERGENCY TELEPHONE NO. 609-386-9200
ADDRESS P.O. BOX 129, RIVER ROAD, FLEMINGTON, NEW JERSEY 08822	
TRADE NAME AND SYNONYMS EXTRUSION 3026, 3063, 3066, 3078, 3083, 3086, 3092, 3098, TENNECO PVC COMPOUND, & MOLDING 3153M, 3159, 3160, 3169, 3179, 3189, 3200, 3211	
CHEMICAL NAME AND SYNONYMS POLY(VINYL CHLORIDE) COMPOUND PLASTICIZED (FLEXIBLE)	
CHEMICAL FAMILY CHLOROHYDROCARBON POLYMER	MOLECULAR FORMULA (CH₂CHCl)_n MOL. WT

SECTION II HAZARDOUS COMPONENTS OF MIXTURES					
COMPONENT	%	THRESHOLD LIMIT VALUE	COMPONENT	%	THRESHOLD LIMIT VALUE
		(UNITS)			(UNITS)
Barium Compounds	(0-1.3%)	- 0.5 mg/m ³	Titanium Dioxide	(0- 1%)	- 15 mg/m ³
Diethylhexyl Phthalate	(0- 38%)	- 5 mg/m ³	Carbon Black	(0-0.5%)	- 3.5 mg/m ³
Mineral Oil	(0-0.8%)	- 5 mg/m ³			
Tin Organic Comp.	(0-2.3%)	- 0.1 mg/m ³			
Epoxidized Soybean Oil	(0-2.5%)	- 0.5 mg/m ³			

SECTION III PHYSICAL DATA	
APPEARANCE AND ODOR Colorless, white, black or colored pellets, practically 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) 1.20 - 1.40
VAPOR DENSITY (AIR = 1) Not applicable	PERCENT VOLATILE (BY WEIGHT) Essentially non-volatile
SOLUBILITY IN WATER Negligible	EVAPORATION RATE (BUTYLACETATE = 1) Not applicable

SECTION IV FIRE AND EXPLOSION HAZARD DATA	
FLASH POINT (SPECIFY METHOD) Not applicable Plasticizer generally over 400°F, COC	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. Shut off current in electrical equipment or wiring.	
UNUSUAL FIRE AND EXPLOSION HAZARDS NFPA lists ignition temperature of 608°F for PVC-plasticizer dust cloud and minimum concentration of 0.035 oz.cu. ft. Fire conditions produce hydrogen chloride, requiring protective equipment.	

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This information is furnished without warranty, representation, inducement or license of any kind except that it is accurate to the best of Tenneco Polymers' knowledge or obtained from sources believed by Tenneco Polymers to be accurate and Tenneco Polymers does not assume any legal responsibility for use or reliance upon same. Customers are encouraged to conduct their own tests. Before using any product read its label.

SECTION V HEALTH HAZARD DATA**THRESHOLD LIMIT VALUE**

See Section II

EFFECTS ON OVEREXPOSURE

None expected in normal handling. (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. (See Section IX).

(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)			
None required in ordinary handling. See Section IX.			
VENTILATION	LOCAL EXHAUST For hot processing.		SPECIAL Vent to stack or scrubber.
	MECHANICAL (General) For ordinary handling.		OTHER Ventilate enclosed spaces.
PROTECTIVE GLOVES Cotton gloves for hot processing.		EYE PROTECTION 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 1910.93q(.1017) on vinyl chloride limits exposure to 1ppm (8 hr av.) and requires monitoring and other precautions in storage, handling and use of polyvinyl chloride, including labeling "Contains Vinyl Chloride - Vinyl Chloride is a Cancer-Suspect Agent", excepting "fabricated products" not subject to "mass melting", as defined. New, low monomer content PVC compounds simplify operation below the OSHA 0.5ppm action level and compliance, assuming normal conditions and ventilation in a processor's work area. Further developments on resins and regulations are pending.

TEN0097



Tenneco Polymers
A Tenneco Company

NUMBER

169

MATERIAL SAFETY DATA

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

SECTION I IDENTIFICATION OF PRODUCT		
MANUFACTURER'S NAME TENNECO POLYMERS, INC., RESEARCH & DEVELOPMENT		EMERGENCY TELEPHONE NO 609-386-9200
ADDRESS RIVER ROAD, P.O. BOX 129, FLEMINGTON, NEW JERSEY 08822		
TRADE NAME AND SYNONYMS TENNECO PVC COMPOUND, RIGID 3711, 3750, 4703		
CHEMICAL NAME AND SYNONYMS POLY(VINYL CHLORIDE) COMPOUND		
CHEMICAL FAMILY CHLOROHYDROCARBON POLYMER	MOLECULAR FORMULA (CH₂CHCl)_n	MOL. WT

SECTION II HAZARDOUS COMPONENTS OF MIXTURES					
COMPONENT	%	THRESHOLD LIMIT VALUE	COMPONENT	%	THRESHOLD LIMIT VALUE
(UNITS)					
Carbon Black	(0-0.6%)	3.5 mg/m ³	Tin Organic Compound	(0-2%)	0.1 mg/m ³
Lead Compounds	(0 - 4%)	0.2 mg/m ³	Titanium Dioxide	(0-1%)	15 mg/m ³
Mineral Oil	(0-0.5%)	5 mg/m ³			

SECTION III PHYSICAL DATA	
APPEARANCE AND ODOR White, Black or Colored Pellets, practically 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) 1.32 - 1.42
VAPOR DENSITY (AIR = 1) Not applicable	PERCENT VOLATILE (BY WEIGHT) Essentially non-volatile
SOLUBILITY IN WATER Negligible	EVAPORATION RATE (BUTYLACETATE = 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 D-1929)	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. Shut off current in electrical equipment or wiring.		
UNUSUAL FIRE AND EXPLOSION HAZARDS NFPA lists ignition temperature of 752°F for layer and 1220°F for PVC dust cloud. Produces combustile 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 OR OVEREXPOSURE

None expected in normal handling. (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. (See Section IX).

(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 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)**

None required in ordinary handling. See Section IX.

VENTILATION	LOCAL EXHAUST For hot processing.	SPECIAL Vent to stack or scrubber.
	MECHANICAL (General) For ordinary handling.	OTHER Ventilate enclosed spaces.
PROTECTIVE GLOVES Cotton gloves for hot processing.		EYE PROTECTION Safety glasses.
OTHER PROTECTIVE EQUIPMENT None required for ordinary handling. For hot processing local exhaust, safety glasses and gloves are recommend.		

SECTION IX SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING OSHA Standard 1910.1017 (.93q) on vinyl chloride limits exposure to 1ppm (8 hr av.) and requires monitoring and other precautions in storage, handling and use of polyvinyl chloride, including labeling "Contains Vinyl Chloride - Vinyl Chloride is a Cancer-Suspect Agent", excepting "fabricated products" not subject to "mass melting", as defined. New, low monomer content PVC compounds simplify operation below the OSHA 0.5qpm action level and compliance, assuming normal conditions and ventilation in a processor's work area. Further developments on resins and regulations are pending.

TEN00 99



Tenneco Polymers
A Tenneco Company

NUMBER

190

MATERIAL SAFETY DATA

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

SECTION I IDENTIFICATION OF PRODUCT

MANUFACTURER'S NAME TENNECO POLYMERS, INC., RESEARCH & DEVELOPMENT		EMERGENCY TELEPHONE NO. 609-386-9200
ADDRESS RIVER ROAD, P.O. BOX 129, FLEMINGTON, NEW JERSEY 08822		
TRADE NAME AND SYNONYMS TENNECO PVC COMPOUND, RIGID 3773, 3774, 3775		
CHEMICAL NAME AND SYNONYMS POLY(VINYL CHLORIDE) COMPOUND		
CHEMICAL FAMILY CHLOROHYDROCARBON POLYMER	MOLECULAR FORMULA (CH ₂ CHCl) _n	MOL. WT

SECTION II HAZARDOUS COMPONENTS OF MIXTURES

COMPONENT	%	THRESHOLD LIMIT VALUE	COMPONENT	%	THRESHOLD LIMIT VALUE
(UNITS)					
Tin Organic Compound (0-3%) - 0.1 mg/m ³					
(UNITS)					

SECTION III PHYSICAL DATA

APPEARANCE AND ODOR White or colored pellets, practically 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) 3773, 3775 1.44 - 1.48 3774 1.40 - 1.44
VAPOR DENSITY (AIR = 1) Not applicable	PERCENT VOLATILE (BY WEIGHT) Essentially non-volatile
SOLUBILITY IN WATER Negligible	EVAPORATION RATE (BUTYLACETATE = 1) Not applicable

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (SPECIFY METHOD) Ignition about 735°F auto- Ignition about 850°F (ASTM D-1929)	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. Shut off current in electrical equipment or wiring.	
UNUSUAL FIRE AND EXPLOSION HAZARDS NFPA lists ignition temperature 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. TEN0 100	

SECTION V HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

See Section II

EFFECTS ON OVEREXPOSURE

None expected in normal handling. (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. (See Section IX).
(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 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)**

None required in ordinary handling. See Section IX.

VENTILATION	LOCAL EXHAUST For hot processing.	SPECIAL Vent to stack or scrubber.
	MECHANICAL (General) For ordinary handling.	OTHER Ventilate enclosed spaces.
PROTECTIVE GLOVES Cotton gloves for hot processing.		EYE PROTECTION 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 1910.1017(.93q) on vinyl chloride limits exposure to 1ppm (8 hr av.) and requires monitoring and other precautions in storage, handling and use of polyvinyl chloride, including labeling "Contains Vinyl Chloride - Vinyl Chloride is a Cancer-Suspect Agent", excepting "fabricated products" not subject to "mass melting", as defined. New, low monomer content PVC compounds simplify operation below the OSHA 0.5ppm action level and compliance, assuming normal conditions and ventilation in a processor's work area. Further developments on resins and regulations are pending.

TEN0 101



Tenneco Polymers
A Tenneco Company

NUMBER

200

MATERIAL SAFETY DATA

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

SECTION I IDENTIFICATION OF PRODUCT		
MANUFACTURER'S NAME TENNECO POLYMERS, INC., RESEARCH & DEVELOPMENT		EMERGENCY TELEPHONE NO. 609-386-9200
ADDRESS RIVER ROAD, P.O. BOX 129, FLEMINGTON, NEW JERSEY 08822		
TRADE NAME AND SYNONYMS TENNECO PVC COMPOUND, RIGID 3780, 3782		
CHEMICAL NAME AND SYNONYMS POLY(VINYL CHLORIDE) COMPOUND		
CHEMICAL FAMILY CHLOROHYDROCARBON POLYMER	MOLECULAR FORMULA (CH₂CHCl)_n	MOL. WT.

SECTION II HAZARDOUS COMPONENTS OF MIXTURES					
COMPONENT	%	THRESHOLD LIMIT VALUE	COMPONENT	%	THRESHOLD LIMIT VALUE
(UNITS)					
Tin Organic Compound	(0-3%)	0.1 mg/m ³			
Acrylic Resin	(0-2%)	10 mg/m ³	(ACGIH)		

SECTION III PHYSICAL DATA	
APPEARANCE AND ODOR White or colored pellets, practically 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) 1.32 - 1.42
VAPOR DENSITY (AIR = 1) Not applicable	PERCENT VOLATILE (BY WEIGHT) Essentially non-volatile
SOLUBILITY IN WATER Negligible	EVAPORATION RATE (BUTYLACETATE = 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 D-1929)	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. Shut off current in electrical equipment or wiring.		
UNUSUAL FIRE AND EXPLOSION HAZARDS NFPA lists ignition temperature 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.		

TEN0 102

SECTION V HEALTH HAZARD DATA**THRESHOLD LIMIT VALUE**

See Section II

EFFECTS OR OVEREXPOSURE

None expected in normal handling. (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. (See Section IX).
(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 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)**

None required in ordinary handling. See Section IX.

VENTILATION	LOCAL EXHAUST For hot processing.	SPECIAL Vent to stack or scrubber.
	MECHANICAL (General) For ordinary handling.	OTHER Ventilate enclosed spaces.
PROTECTIVE GLOVES Cotton gloves for hot processing.		EYE PROTECTION 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 1910.1017(.93q) on vinyl chloride limits exposure to 1ppm (8 hr av.) and requires monitoring and other precautions in storage, handling and use of polyvinyl chloride, including labeling "Contains Vinyl Chloride - Vinyl Chloride is a Cancer-Suspect Agent", excepting "fabricated products" not subject to "mass melting" as defined. New, low monomer content PVC compounds simplify operation below the OSHA 0.5ppm action level and compliance, assuming normal conditions and ventilation in a processor's work area. Further developments on resins and regulations are pending.

TEN0 103

DATE 3/12/84

NAME AND TITLE D. GOODMAN, PRODUCT REGULATIONS

SHEET NUMBER 200



Tenneco Polymers
A Tenneco Company

NUMBER

168

MATERIAL SAFETY DATA

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

SECTION I IDENTIFICATION OF PRODUCT

MANUFACTURER'S NAME TENNECO POLYMERS, INC., RESEARCH AND DEVELOPMENT		EMERGENCY TELEPHONE NO. 609-386-9200
ADDRESS P.O. BOX 129, RIVER ROAD, FLEMINGTON, NEW JERSEY 08822		
TRADE NAME AND SYNONYMS 1684, 1688, 1689, 1755-1, 1755-5, 1776-2, TENNECO PVC COMPOUND, RECORD 1809, 1815-2, 1820-6		
CHEMICAL NAME AND SYNONYMS VINYL CHLORIDE - VINYL ACETATE COPOLYMER		
CHEMICAL FAMILY CHLOROHYDROCARBON COPOLYMER	MOLECULAR FORMULA {CH₂CHCl} x {CH₂CHOCOCH₃}_y	MOL WT

SECTION II HAZARDOUS COMPONENTS OF MIXTURES

COMPONENT	%	THRESHOLD LIMIT VALUE	COMPONENT	%	THRESHOLD LIMIT VALUE
		(UNITS)			(UNITS)
Carbon Black	(0.1-1%)	- 3.5 mg/m ³			
Lead Compounds	(0 -2%)	- 0.2 mg/m ³			

SECTION III PHYSICAL DATA

APPEARANCE AND ODOR Black pellets, practically odorless	
BOILING POINT (DEGREES FAHRENHEIT) Not applicable	MELTING POINT (DEGREES FAHRENHEIT) Not applicable Softens about 130-150°F
VAPOR PRESSURE (MM. OF MERCURY) Not applicable	SPECIFIC GRAVITY (WATER = 1) 1.35 - 1.39
VAPOR DENSITY (AIR = 1) Not applicable	PERCENT VOLATILE (BY WEIGHT) Essentially non-volatile
SOLUBILITY IN WATER Negligible	EVAPORATION RATE (BUTYLACETATE = 1) Not applicable

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (SPECIFY METHOD) (DEGREES FAHRENHEIT) Ignition about 735°F for PVC (ASTM D-1929)	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. Shut off current in electrical equipment or wiring.	
UNUSUAL FIRE AND EXPLOSION HAZARDS NFPA lists ignition temperature of 608°F for PVC-plasticizer dust cloud and minimum concentration of 0.035 oz./cu. ft. Fire conditions produce hydrogen chloride, requiring protective equipment.	

SECTION V HEALTH HAZARD DATA**THRESHOLD LIMIT VALUE**

See Section II

EFFECTS OR OVEREXPOSURE

None expected in normal handling. (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. (See Section IX).
(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 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)**

None required in ordinary handling. See Section IX.

VENTILATION	LOCAL EXHAUST For hot processing.	SPECIAL Vent to stack or scrubber.
	MECHANICAL (General) For ordinary handling.	OTHER Ventilate enclosed spaces.
PROTECTIVE GLOVES Cotton gloves for hot processing.		EYE PROTECTION 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 1910.93q(.1017) on vinyl chloride limits exposure to 1ppm (8 hrs av.) and requires monitoring and other precautions in storage handling and use of polyvinyl chloride, including labeling "Contains Vinyl Chloride - Vinyl Chloride is a Cancer-Suspect Agent", excepting "fabricated products" not subject to "mass melting", as defined. New, low monomer content PVC compounds simplify operation below the OSHA 0.5ppm action level and compliance, assuming normal conditions and ventilation in a processor's work area. Further developments on resins and regulations are pending.

TEN0105



MATERIAL SAFETY DATA SHEET

TENNECO POLYMERS, INC.
P. O. BOX 2511
HOUSTON, TX 77001

MATERIAL Methanol

MSDS NO. 110 DATE 3/25

I. MATERIAL IDENTIFICATION

MATERIAL / TRADE NAME Methanol

24 HOUR EMERGENCY TELEPHONE

TENNECO 713 479-3411

CHEMTREC 800 424-9300

SYNONYMS Methyl Alcohol, Wood Alcohol, Carbinol

CHEMICAL FAMILY / FORMULA Alcohols/ CH_3OH

CAS NO. 67-56-1

HAZARD RATING*

☐ 1 HEALTH
☐ 3 FIRE
☐ 0 REACTIVITY

0 LEAST 3 HIGH
1 SLIGHT 4 EXTREME
2 MODERATE * NFPA 704

II. INGREDIENTS

COMPOSITION

Methyl Alcohol

%

99.9

TOXICITY DATA

8 hr TWA 200ppm ($260\text{mg}/\text{m}^3$) (skin)

Human

Eye-5ppm

Oral-LDLo 340mg/kg

Inhalation-TCLo $86000\text{mg}/\text{m}^3$ (irritator)

Rat - Oral

LD₅₀ 13gm/kg

III. PHYSICAL DATA

BOILING POINT, 760mm/Hg - 148°F (64.5°C)

SOLUBILITY IN H_2O , % BY WEIGHT - Totally miscible

SPECIFIC GRAVITY, $\text{H}_2\text{O} = 1$ - 0.791

EVAPORATION RATE, BUTYL ACETATE ≈ 1 - 4.6

VAPOR PRESSURE, mm/Hg - 96 @ 68°F (20°C)

Molecular Weight - 32.04

VAPOR DENSITY, AIR ≈ 1 - 1.11

Melting Point - -144°F (-97.8°C)

VOLATILES, % BY VOLUME - 100

APPEARANCE AND ODOR Clear, colorless liquid with characteristic alcohol odor. Less pure grades may have a pungent, oily odor.

IV FIRE AND EXPLOSION DATA

FLASH POINT AND TEST METHOD

54°F (12.2°C) TCC

AUTO IGNITION TEMPERATURE

867°F (464°C)

FLAMMABILITY LIMITS IN AIR, % BY VOLUME

LOWER 6 UPPER 36.5

EXinguISHING MEDIA Dry chemical, alcohol type foam, CO_2 . Water may be ineffective. Use water spray to cool fire exposed containers. Use alcohol resistant foam to extinguish large fires or to blanket spill to reduce vapors.

SPECIAL FIRE FIGHTING PROCEDURES

Class IB flammable liquid. Avoid water streams which may splash and spread flammable liquid. Vapors are heavier than air and may flow along surfaces to distant ignition sources and flash back. Fire fighters should use self-contained breathing equipment and protective clothing for fires in enclosed areas.

UNUSUAL FIRE AND EXPLOSION HAZARDS

Reacts violently to oxidizers. Keep away from heat, sources of ignition. Burns with a clear, almost invisible flame, especially hard to see in strong sunlight.

TEN0106

MSDS NO. 110

MATERIAL Methanol

REACTIVITY DATA**STABILITY**

STABLE



UNSTABLE

HAZARDOUS POLYMERIZATION

MAY OCCUR



WILL NOT OCCUR

CONDITIONS AND MATERIALS TO AVOID

Avoid strong oxidizing agents, excessive heat, sources of ignition.

HAZARDOUS DECOMPOSITION PRODUCTS

carbon monoxide, carbon dioxide

VI. OCCUPATIONAL EXPOSURE LIMITS

OSHA TLV - 200ppm 8 hr TWA ($260\text{mg}/\text{m}^3$) Skin
ACGIH(1984) adds "Skin" notation

VII. HEALTH INFORMATION

Methanol is a poisonous chemical that can affect the body through inhalation, skin absorption or ingestion.

Inhalation causes dizziness, nausea, visual impairment, respiratory failure, muscular incoordination, and narcosis.

Ingestion can produce blindness, dizziness, headache and in amounts of 100-250ml can be fatal.

Skin contact causes irritation, dryness, dermatitis and erythema. Eye contact causes irritation.

Toxic effects from repeated over exposure to methanol are accumulative and effect the central nervous system, especially the optic nerve. These symptoms may linger for several days after exposures.

VII. EMERGENCY AND FIRST AID PROCEDURES

Skin - wash with soap and water immediately after contact. Remove contaminated clothing immediately. Launder before reuse.

Eyes - Flush with large amounts of water for 15 minutes, getting under eyelids. Contact physician if irritation persists.

Inhalation - remove to fresh air. Restore breathing if necessary. Administer oxygen if breathing difficulty persists and contact physician for advice.

Ingestion - Drink large amounts of water, milk or sodium bicarbonate to dilute material in stomach. Induce vomiting if victim is conscious. Consult physician for additional advice and treatment.

MSDS NO.

110

MATERIAL

Methanol

IX. EMPLOYEE PROTECTION**RESPIRATORY PROTECTION**

Provide adequate ventilation or exhaust to meet TLV requirements. Air supplied or self-contained breathing equipment recommended for exposures above TLV.

PROTECTIVE CLOTHING

Rubber gloves and rubber protective aprons or clothing required to prevent skin contact. Goggles or face shield should be used to protect face and eyes from splashing.

OTHER PROTECTIVE MEASURES

Eye wash and safety shower should be provided in area of use.

X. ENVIRONMENTAL PROTECTION**SPILL CLEAN-UP PROCEDURE**

Eliminate all ignition sources. Stop spill or leak if it can be done safely. Contain spill to smallest area possible. Use absorbent materials to soak up small spills. Larger spills should be recovered for reuse or disposal. Spills in critical areas can be diluted with water to reduce fire hazard during cleanup.

Do not allow material to enter sewers, drains or waterways.

WASTE DISPOSAL

Waste materials should be disposed of by a licensed solvent waste disposal company. Federal, state and local regulations must be followed.

ENVIRONMENTAL HAZARDS

Aquatic toxicity rating - TLm 96: over 1000 ppm.

XI. SPECIAL PRECAUTIONS

Store in closed containers in cool place.

No smoking allowed in areas of use or storage.

Use explosion-proof electrical fixtures.

Containers should be electrically grounded/bonded during material transfer to prevent static spark.

Corrosive to lead and aluminum.

MSDS NO 110

MATERIAL Methanol

TRANSPORTATION REQUIREMENTS

DOT SHIPPING NAME: Methanol or methyl alcohol DOT I.D. NO.: UN1230
DOT CLASSIFICATION: Flammable liquid UN HAZARD CLASS: UN1230
IMCO class - 3.2

XIII. OTHER REGULATORY CONTROLS

None determined

THIS INFORMATION RELATES ONLY TO THE SPECIFIC MATERIAL DESIGNATED AND MAY NOT BE VALID FOR SUCH MATERIAL USED IN COMBINATION WITH ANY OTHER MATERIALS OR IN ANY PROCESS. SUCH INFORMATION IS TO THE BEST OF THIS COMPANY'S KNOWLEDGE AND BELIEVED ACCURATE AND RELIABLE AS OF THE DATE INDICATED. HOWEVER, NO REPRESENTATION, WARRANTY OR GUARANTEE IS MADE AS TO ITS ACCURACY, RELIABILITY OR COMPLETENESS. IT IS THE USER'S RESPONSIBILITY TO SATISFY HIMSELF AS TO THE SUITABLENESS AND COMPLETENESS OF SUCH INFORMATION FOR HIS OWN PARTICULAR USE.

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