



MATERIAL SAFETY DATA SHEET: PVC COMPOUND (NON-LEAD STABILIZED)

CGN- Delta (Jiangsu) Plastic & Chemical Co., Ltd.

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name Polyvinyl Chloride (PVC) Compound (Non-lead Stabilized)
Effective Date 4/5/2014
Synonyms Chloroethylene Homopolymer Compound
Chemical Formula (C₂H₃Cl) 4
CAS Name & No. Not applicable (mixture)
Product Type 1 021-1 B-070
Manufacturer's Name and Address Jiangsu Delta Plastic & Chemical Co., Ltd.
. 90#, New North-East Road, Shaxi Town,
. Taicang City, Jiangsu 215421 China
Emergency Telephone Number 0086-512-53228172
MSDS Contact Technology Department
. 90#, New North-East Road, Shaxi Town,
. Taicang City, Jiangsu 215421 China
. Phone Number: 0086-512-53228172

2. COMPOSITION/INFORMATION ON INGREDIENTS

Compounded PVC is an inert material in its normal usage. All the components listed below are encapsulated in the PVC matrix. Typical compositions are listed below.

Component	Wt. %	
Polyvinyl Chloride Polymer	40-55%	
Inert Fillers	10-30%	CaCO ₃ , talc, carbon black, TiO ₂ , Clay
Heat Stabilizer	2-5%	Organometallic compounds of barium and/or calcium-zinc
Plasticizer	15-25%	High molecular weight esters
Colourant	0-0.5%	Organic and inorganic colourants

3. HAZARDS IDENTIFICATION

PRECAUTIONARY INFORMATION

Caution: If proper procedures for processing PVC compounds are not followed, processing vapours can be liberated at elevated temperatures. The presence of these vapours may result in exposure. Additionally, the composition of these vapours may vary widely according to the individual processing procedures and materials used. Processors must determine for themselves the appropriate equipment and procedures for their use.

POTENTIAL HEALTH EFFECTS

Primary Routes of Exposure: Inhalation of process emissions during periods of elevated temperature.
Eye: Vapours emitted during processes involving elevated temperatures may cause eye irritation. Dust resulting from the handling of powder may be irritating to the eyes.
Skin Contact: Vapours emitted during processes involving elevated temperatures may cause skin irritation. Dust resulting from the handling of powder may be irritating to the skin.
Skin Absorption: This material is initially a dry solid pellet; no absorption is likely to occur in its initial form. Vapours emitted during processes involving elevated temperatures may absorb through the skin at low levels.
Ingestion: Slightly toxic by ingestion. Dust may become airborne during handling, resulting in the potential for incidental ingestion. Vapours emitted during processes involving elevated temperature may be ingested at low levels. Adequate ventilation should be provided
Inhalation: Dust may become airborne during handling, resulting in potential inhalation exposure. Vapours emitted during processes involving elevated temperatures may be inhaled if not adequately ventilated



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HAZARD CLASSIFICATION

Acute Effects: Dust associated with the handling of PVC powder as well as vapours liberated from PVC compound at high temperatures may be irritating to the eyes, skin and respiratory tract if not adequately ventilated.

Chronic Effects: Chronic exposure to vapours from heated or thermally decomposed plastics may cause an asthma-like syndrome due to the inhalation of process vapours or fumes. The onset of irritation may be delayed for several hours. Vapours may accumulate within the facility during normal operating procedures that involve elevated temperatures. Exposure to these elevated concentrations, if not adequately ventilated, may have significant health effects.

Carcinogenic: IARC has determined that there is inadequate evidence of carcinogenicity of a polyvinyl chloride in both animals and humans. The overall evaluation of polyvinyl chloride is Group 3, meaning that it is not classifiable as a carcinogen (IARC Vol. 19, 1979). Polyvinyl chloride is not listed as a carcinogen by OSHA, NIOSH, NTP, IARC or EPA.

Some additives used to make PVC compound may contain metals, which in some chemical forms are suspected or confirmed carcinogens. These metals, if present, are bound in the crystalline structure of the additive, and to the supplier's best knowledge, do not present a significant health risk. Additionally, the low levels of additives used in PVC compounds are also bound in the polymer matrix and to the best of the supplier's knowledge, do not present a significant health risk.

4. FIRST AID MEASURES

Inhalation: Remove to fresh air. Obtain medical attention immediately if irritation persists.

Skin Contact: Flush with water to remove material from skin. Obtain medical attention if irritation persists.

Eye Contact: Flush with large amounts of water for 15 minutes. Obtain medical attention if irritation persists.

Ingestion: No effect expected. If large amounts are ingested, seek medical attention. Only induce vomiting at the instructions of a physician.

5. FIRE FIGHTING MEASURES

Flash Ignition Temperature. >600°F

Flammable Limits (% By Vol.)

Lower Explosive Limit (LEL) Not Applicable

Upper Explosive Limit (UEL). Not Applicable

Autoignition Temperature Not Applicable

Fire Fighting Procedures/Fire Extinguishing Media

Carbon dioxide or water.

Unusual Fire and Explosion Hazards

PVC evolves hydrogen chloride, carbon monoxide, and other gases when burned. Exposure to combustion products may be fatal and should be avoided. PVC Compounds will not normally continue to burn after ignition without an external fire source. Do not allow fire fighting runoff water to enter streams, rivers or lakes. The water may collect HCL and other combustion products.

Fire-Fighting Equipment

Wear full bunker gear including a positive pressure self-contained breathing apparatus in any closed space.

6. ACCIDENTAL RELEASE MEASURES

Protect People:

Remove unnecessary personnel from the release area .

Protect the Environment:

Contain material to prevent contamination of the soil, surface water or ground water .

Clean Up:

Sweep or vacuum material and place in a disposal container. See section 11.

7. HANDLING AND STORAGE

Handling

Use the proper personal protective equipment during handling. Minimize dust generation and accumulation. Use good housekeeping practices.

Storage

Store in a cool, dry, protected area away from heat, sparks, and flame.



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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

All personal protective equipment should be selected in accordance with the hazard assessment required by 29 CFR 1910.132(d).

Respiratory Protection

For most conditions, no respiratory protection should be needed. However, if dust is produced during handling, a NIOSH-approved air purifying filter respirator that meets the requirements of 29 CFR 1910.134 should be used. Full-face self-contained breathing apparatus may be needed when dealing with vapours from combustion of product. Respirators must be selected based on the airborne levels found in the workplace and must not exceed the working limits of the respirator.

Eye Protection

Safety Glasses/Chemical goggles

Skin Protection

Skin protection meeting the requirements of 29 CFR 1910.132 may be needed. Under normal conditions, work clothing should be sufficient. Wash skin if contacted by PVC powder or pellets. Wash contaminated clothing before reusing. Gloves for thermal protection may be necessary when handling hot or molten compound.

Ventilation

May be necessary to provide general and/or local ventilation to help maintain airborne concentrations below exposure guidelines. Local exhaust ventilation should comply with OSHA regulations and the American Conference of Industrial Hygienists, Industrial Ventilation-A Manual of Recommended Practice.

Exposure Guidelines

No exposure limits have been established for this material. It is recommended that exposure be kept below the limits for Nuisance Dust (PNOC):

OSHA-PEL: 15mg/M³ 8 hr-TWA (total dust)
 5mg/M³ 8 hr-TWA (respirable)

ACGIH-TLV: 10mg/M³ 8 hr-TWA (inhalable)
 3mg/M³ 8 hr-TWA (respirable)

The following materials may be present in this product, but are not anticipated to exceed exposure limits under normal conditions:

Chemical	OSHA-PEL	ACGIH-TLV
Calcium Carbonate	15mg/M ³ 8 hr-TWA (total dust) 5mg/M ³ 8 hr-TWA (respirable)	10 mg/M ³ 8 hr-TWA
Carbon Black	3.5 mg/M ³ 8 hr-TWA	3.5 mg/M ³ 8 hr-TWA
Titanium Dioxide	10 mg/M ³ 8 hr-TWA	10 mg/M ³ 8 hr-TWA (total dust)
Antimony Trioxide	N/A	0.5 mg/M ³ 8 hr-TWA
Barium Compounds (soluble)	0.5 mg/M ³ 8 hr-TWA	0.5 mg/M ³ 8 hr-TWA
Arsenic Compounds	0.5 mg/M ³ 8 hr-TWA (organic) 0.1 mg/M ³ 8 hr-TWA (inorganic)	0.01 mg/M ³ 8 hr-TWA (elemental/inorganic)
Hydrogen Chloride	5ppm Ceiling	2ppm Ceiling

Additional hazardous constituents may be released during processes involving elevated temperatures. These constituents are dependent on processing conditions and should be verified by processor.

Under normal processing conditions, no occupational exposures to vinyl chloride monomer exceeding the established exposure limits for this material are anticipated. The OSHA-PEL for vinyl chloride is 1 ppm over an 8-hr TWA. The OSHA-STEL for vinyl chloride is 5 ppm for any 15-minute period.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance** Pellets of varying size, hardness, and color
- Odor** No distinct odor
- Boiling Point** Solid
- Melting Point** Varies
- Solubility** None
- Specific Gravity (Water = 1.0)** 1.15-1.70
- Vapour Density (Air = 1.0)** Not Applicable
- Vapour Pressure** Not Applicable
- pH** Not Applicable



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10. STABILITY AND REACTIVITY

Stability

Stable under normal conditions.

Polymerization

Hazardous polymerization does not occur.

Hazardous Decomposition Products

Overheating may cause thermal degradation of PVC compound. Fumes and vapours (including CO, CO2, and HCl) may be generated during this thermal degradation. Emissions are also possible during normal operating conditions, and may accumulate within an inadequately ventilated facility.

Incompatible Materials

Do not allow this product to come in contact with acetal or acetal copolymers within the extruder or moulding machine. At processing conditions, the two materials are mutually destructive and involve rapid degradation of the products. Equipment should be purged with acrylic, ABS, polystyrene, or other purge compound to avoid even trace amounts of this product and acetals from coming in contact with each other.

11. TOXICOLOGICAL INFORMATION

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The following information on polyvinyl chloride is extracted from both the HSDB and NTP databases.

Animal Toxicity

Oral: Rat, TD₅₀ 210gm/kg

Inhalation: Mouse, LC₅₀ 140mg/M³/10M

TD₅₀ = Lowest toxic dose in a given species by a given route of exposure.

LC₅₀ = Concentration that is lethal to 50% of a given species by a given route of exposure.

Rodents exposed to PVC by dietary or inhalation routes for 6 to 24 months have shown no significant toxicological effects.

While PVC is generally considered an inert polymer, exposure to PVC dust has been reported to cause lung changes in animals and humans, including decreased respiratory capacity and inflammation. However, exposures approaching the nuisance dust exposure limits are not anticipated to pose a significant health risk.

12. ECOLOGICAL INFORMATION

Environmental Fate:

Aquatic: No data available

Biodegradation: Not subject to biodegradation

Ecotoxicity: Based on the high molecular weight of this polymeric material, transport of this compound across biological membranes is unlikely. Accordingly, the probability of environmental toxicity or bioaccumulation in organisms is remote. Due caution should be exercised to prevent the accidental release of this material to the environment.

13. DISPOSAL CONSIDERATIONS

Waste Management Information: Do not dump into any sewers, on the ground, or into any body of water. Any disposal practice must be in compliance with local, state and federal laws and regulations (contact local or state environmental agency for specific rules). Waste characterization and compliance with applicable laws are the responsibility of the waste generator.

14. TRANSPORTATION INFORMATION

Proper Shipping Name. Polyvinyl Chloride

DOT Hazard Class Non-hazardous

DOT Shipping I.D. No. None

PG None

Labelling. None

RQ N/A



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15. REGULATORY INFORMATION

Regulatory information is not meant to be all-inclusive. It is the user's responsibility to ensure compliance with federal, state or provincial and local laws.

SARA Title III

Section 302 and 304 of the Act; Extremely Hazardous Substances (40 CFR 355)

<u>COMPONENT</u>	<u>CAS NO.</u>	<u>TPO (lbs)</u>	<u>RQ (lbs)</u>
None	N/A	N/A	N/A

Note: TPQ - Threshold Planning Quantity RQ - Reportable Quantity

Section 311 Hazard Categorization (40CFR 370)

<u>ACUTE</u>	<u>CHRONIC</u>	<u>FIRE</u>	<u>PRESSURE</u>	<u>REACTIVE</u>
Not Listed				

Section 313 Toxic Chemicals (40 CFR372.65)

<u>COMPONENT</u>	<u>CAS NO.</u>	<u>WT. %</u>
Antimony Compounds	N010	0-20%
Barium Compounds	N040	0-10%
Cadmium Compounds	N078	0-10%
Zinc Compounds	N982	0-10%

CERCLA

Section 102(a) Hazardous Substances (40 CFR 302.4)

<u>COMPONENT</u>	<u>CAS NO.</u>	<u>WT. %</u>	<u>RO (lbs)</u>
None	N/A	N/A	N/A

RCRA

This product, as supplied, is not a hazardous waste according to the USEPA's Toxicity Characteristic Leaching Procedure. Any physical or chemical modification of this product may change the TCLP test results.

TSCA

All components are listed on the TSCA inventory or are exempt.

Proposition 65

This product contains substances known to the State of California to cause cancer and/or reproductive toxicity.

Canadian Regulations

This product has been classified according to the hazard criteria of the Canadian Controlled Products Regulations, Section 33 and the MSDS contains all information required by this regulation.

WHMIS Classification-NOT a Controlled Product

OSHA 29 CFR 191 0.1 017

This compound may contain trace levels (<0.0005%) of VCM. Under normal working conditions with adequate ventilation, neither the OSHA-PEL of 1 ppm (8-hr-TWA), nor the OSHA-STEL (S.Oppm) should be exceeded. The workplace should be monitored and if the level exceeds any of the PELs or action levels, refer to 29 CFR 1910.1 01 7.

16. OTHER INFORMATION

IMPORTANT: The information and data herein are believed to be accurate and have been compiled from sources believed to be reliable. It is offered for your consideration, investigation and verification. Buyer assumes all risk of use, storage and handling of the product in compliance with applicable federal, state, and local laws and regulations.

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