

General Polymers

Code: 80002

Distributed by: Ashland Chemical Company
P.O. Box 2219
Columbus, OH 43216
Data Sheet No. 0277408-000.000 Invoice Date: 08/29/88
Product Name ALPHA AND DURAL PVC COMPOUNDS

GENERAL INFORMATION -

Manufacturer's Name Alpha Chemical & Plastics Corp.
Address 1 Jabez St., Newark, NJ 07105
Phone Number 800-526-8362
Emergency Contact Manager of Regulatory Compliance
201-589-4444

Note:

The data in this bulletin is applicable for flexible and rigid PVC compounds. It does not apply to our Vythene(R) (PVC/Polyurethane alloy) compounds or our Vynite(R) (PVC/Nitrile Rubber alloy) compounds. For these products, see Bulletins ACP-12 and ACP-14, respectively.

SECTION I -

Trade Name ALPHA(R) PVC (flexible) and DURAL(R) (rigid) compounds

Chemical Name/Synonyms	CAS Number	Formula
Blend of Polyvinyl Chloride/ and vinyl additives*	Not applicable	Not applicable

SECTION II - HAZARDOUS INGREDIENTS*

	CAS Number	Typical Amount in Product	OSHA PEL	OSHA STEL
Residual Vinyl Chloride Monomer	75-01-4	<10ppb	1 ppm	5 ppm
Monomeric Phthalate and Adipate Plasticizers--DEHP	117-81-7	5-50%	5 mg/m3	10 mg/m3
DEHA	103-23-1	5-15%	NA	NA
Heavy Metal Stabilizers such as Cadmiums, Tins, Bariums, etc.	*	< 5%	*	*
Pigments and Fillers (based on Chromium, Titanium, Silica, Lead or other organic or inorganic chemicals)	*	*	*	*

PVC Dust should not exceed 15 mg/m3 average per 8-hour day (29 CFR 1910.1000).

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PEL-Permissible Exposure Limit: time weighted average for an 8-hour workday.
STEL-Short Term Exposure Limit: for periods up to 15 minutes.
(R) Registered Trademark of ALPHA CHEMICAL & PLASTICS CORP.
* See Appendix A and B
NA-Not Available

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SECTION III - PHYSICAL DATA (Typical data, not specifications)

Specific Gravity	1.14-1.85
Solubility in Water:	Negligible
Appearance and Odor:	Clear, translucent or opaque; octahedral, cylindrical or spherical granules, or powder, with slight odor.
% Volatile by Volume:	Essentially non-volatile.
Boiling Point (deg F):	NA
Vapor Pressure (mm Hg):	NA
Vapor Density (Air = 1):	NA
Evaporation Rate:	NA
Particle Size:	Pellets measuring approximately 1/8", or powder of variable particle size due to compounding ingredients.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash Ignition Temperature (ASTM D-1929): Approximately 735 deg F.

Self Ignition Temperature (ASTM D-1929): Approximately 850 deg F.

Flammable Limits in Air (% by Volume): Not Available.

Extinguishing Media: Water spray. ABC dry powder. Protein type air foams. (Carbon Dioxide might be ineffective medium due to lack of cooling capacity which may result in re-ignition.

Special Fire Fighting Procedure: Wear positive pressure self-contained breathing apparatus to prevent inhalation of combustion gases. Personnel not having suitable respiratory protection must leave the area immediately to prevent significant exposure to toxic combustion gases from any source.

Usual Fire And Explosion Hazards: Rigid PVC is self-extinguishing. PVC compounds, especially highly plasticized flexible powdered materials, may have dust explosion potential due to compounding ingredients. Control or eliminate likely ignition sources. Prevent accumulation of potentially explosive dust concentration. Ventilate process area well.

SECTION V - HEALTH HAZARD DATA

Threshold Limit Value: None established for PVC compounds.

Effects of Overexposure: None known. However, excessive processing vapors may produce acute health effects in some individuals. The effects relate primarily to eye, throat, and nose irritation. Individuals with bronchial asthma and other types of chronic respiratory diseases may develop bronchial spasm if exposure is prolonged.

Emergency and First-Aid Procedure: Exercise personal hygiene. In case of exposure to excessive processing vapors, move to fresh air, flush eyes with water.

Carcinogenicity: This material contains vinyl chloride which is a cancer suspect agent. Polyvinyl chloride is listed by IARC, as of 1983, as an

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indefinite suspect in humans. There is no polyvinyl chloride listing in NTP Fourth Annual Report on Carcinogens, 1985.

SECTION IV - REACTIVITY DATA

Stability: Stable

Incompatibility (Materials to avoid): In processing equipment, avoid contact of PVC compounds with acetal or amine containing materials. At processing conditions, these materials are mutually destructive and involve rapid decomposition of vinyl compounds. Processing temperatures in excess of 400 deg F for a prolonged period of time will cause slow darkening and degradation.

Hazardous Decomposition Products: Above 570 deg F, thermal decomposition liberates HCl, CO, CO2 and (in small amounts) aromatic and aliphatic hydrocarbons.

Hazardous Polymerization: Will not occur.

SECTION VII - SPILL OR LEAK PROCEDURES

Steps to be taken if material is released or spilled: Sweep or vacuum into containers for reuse or disposal.

Waste Disposal Method: Sanitary landfill or incineration in accordance with Federal, state, or local regulations. Not hazardous for solid waste disposal per Federal Resource Conservation and Recovery Act (RCRA), 40 CFR 261.

SECTION VIII - SPECIAL PROTECTION INFORMATION

Respiratory Protection - Dust: Not required in ordinary handling. If condition exists where dust is possible, such as handling dry vinyl blend, wear NIOSH approved respirator.

Ventilation: Exhaust ventilation designed to pull vapors away from workers in the process area should be installed in all operations capable of creating dust, fumes and vapors.

Other Protection: Rubber gloves should be worn when cleaning condensation from exhaust hood and other surfaces to prevent skin contact. Use of safety glasses or goggles is recommended.

SECTION IX - SPECIAL PRECAUTIONS

1. Handle and use vinyl compounds under well ventilated conditions.
2. Avoid breathing fumes.
3. Do not store or consume food in processing areas.
4. Wash hands prior to eating, smoking, or using personal hygiene

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facilities.

5. Cool regrind before placing in containers to prevent decomposition.
6. Maintain good housekeeping at all times by keeping PVC pellets off the floor to prevent slipping.
7. Store pellets in unopened containers at 50 - 85 deg F. Protect from direct heat and light (UV).

SECTION X - LABELS, TRANSPORTATION AND OTHER REGULATORY INFORMATION

DOT: PVC compounds for domestic transportation or labeling purposes are not defined or designated as hazardous materials by the U.S. Department of Transportation under Title 49 of the Code of Federal Regulations. DOT Classification:Plastics - n.o.s.

FDA: Many of our PVC compounds have been formulated with ingredients sanctioned by the U.S. Food and Drug Administration for various food contact applications.

TSCA: All ingredients of Alpha PVC compounds have been listed in the TSCA Inventory of Chemical Substances.

OSHA: PVC compounds may contain a very low level of vinyl chloride monomer. Under normal working conditions with adequate ventilation, OSHA's PEL (1 ppm) will not be exceeded. The workplace should be monitored, and if the level exceeds the PEL, refer to 29 CFR 1910.1017. The regulation requires that containers of PVC resin shall be legibly labeled:

POLYVINYL CHLORIDE
CONTAINS
VINYL CHLORIDE
VINYL CHLORIDE IS A CANCER-SUSPECT AGENT

There is no such labeling requirement that would apply to rigid or flexible PVC compounds.

EPCRA:The compound sold by Alpha Chemical & Plastics Corp. might contain one or more chemicals listed under Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986. Purchasers of such compounds are advised of "Section 313 Components" in separate letters.

SECTION XI - HAZARD CODES

NFPA 704 (1)

Hazard Code Key

4=Extreme Flammability

3=High

2=Moderate

1=Slight Health

0=Insignificant



Reactivity

HMIS (2)

HMIS (2)		
↑HEALTH	↑	↑
↑HAZARD	↑	0 ↑
↑FLAMMABILITY	↑	↑

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MATERIAL SAFETY DATA SHEET

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Special

↑HAZARD	↑	1	↑

↑REACTIVITY	↑		↑
↑HAZARD	↑	0	↑

↑MAXIMUM PERSONAL			↑
↑PROTECTION	↑	*	↑

* Wear safety glasses. Wear gloves and/or dust respirator when needed.

1- National Fire Protection Association. (Hazard classification for a fire situation.

2- Hazardous Materials Identification System, National Paint and Coatings Association.

(Hazard classification for the material as sold).

APPENDIX A

CAS Number and Chemical Formulation

A listing of specific ingredients used in individual compounds can be obtained from the home office upon request. This information will be limited to those materials classified as hazardous under Federal or State Hazardous Substances Lists, or that are reportable under Section 313 of EPCRA. If unsure whether or not to file a report, or require more information on this law, call the EPA Emergency Planning and Community Right-To-Know Hotline: 800-535-0202, or in Washington, DC or Alaska: 202-479-2449.

APPENDIX B

Hazardous Ingredients (Regulatory References)

Your specific ALPHA compound MAY OR MAY NOT contain hazardous additives in levels exceeding the States' R-T-K regulatory requirements. However, in the PVC compounds sold to you in pellet form, all additives are essentially encapsulated in an impervious plastic matrix and therefore, in normal use, they do not represent worker exposure to hazardous materials.

When PVC compounds are used in the form of dry blend, exposure to excessive amounts of dust must be avoided. All components described below represent some hazard, when airborne; however, when PVC compound dryblends are kept below the mandatory "nuisance dust" levels (15 mg/m³), none of these ingredients will approach the permissible exposure limits in the air, with possible exception of some fillers.

Vinyl Chloride Monomer - VMC

OSHA regulated material under 29 CFR 1910.1017. This current regulation requires that no employee may be exposed to VCM concentrations greater than 1 ppm (parts per million by volume) averaged over any 8-hour period, or 5 ppm averaged over any period not exceeding 15 minutes. The "action

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level" is 0.5 ppm averaged over an 8-hour workday. All facilities where PVC is processed or fabricated (with heat sufficient to cause mass melting) shall be monitored to determine concentration of VCM in the workplace.

Alpha Chemical & Plastics Corp. has implemented continuing technical efforts to reduce the level of VCM in the environment and in our PVC compounds. Extensive product and process improvements have resulted in extremely low levels of residual chloride monomer (RCVM) in our compounds (typically not detectable with methods sensitive to 2 ppb).

Published laboratory work has shown vinyl compounds to release non-detectable amounts (less than 0.1 ppm) of VCM under normal processing conditions up to 210 deg C (410 deg F) for 30 minutes heating (Ref: I.B. Wakeman, et, al., Polymer Engineering and Science-Vol. 18, No. 5, April, 1978). Therefore, shipping containers for our compounds are not labeled for RVCN, unless the customer specifies.

Compliance with OSHA regulations require that a program of initial monitoring be implemented, and Alpha Chemical & Plastics Corp. recommends that periodic testing be done thereafter. With current PVC compounds, in combination with efficient ventilation and good housekeeping programs, it should be possible for a typical processing plant not to have to regulate their area.

Plasticizers

Certain phthalate and adipate-ester plasticizers appear on State Hazardous Substance Lists.

DEHP [CAS No. 117-81-7; CAS Name: 1,2-Benzenedicarboxylic acid, Bis(2-ethylhexyl) ester] is an OSHA regulated substance. The current Threshold Limit Value (TLV) for DEHP (DOP) is 5 mg/m³ time-weighted average concentration for an 8-hour workday. NIOSH has completed workplace monitoring studies to determine DEHP exposure levels in PVC compound processing operations, and found workers' exposure level to be consistently less than 0.5 mg/m³, an order of magnitude below the current OSHA TWA standard.

DEHP is an FDA sanctioned material for food contact applications under 21 CFR 175.300 and 181.27.

Another plasticizer, DEHA [CAS No. 103-23-1; CAS Name: Hexanedioic Acid, Bis(2-ethylhexyl) ester] also appears on certain State Hazardous Substance Lists. TLVs have not been established for this plasticizer.

Alpha flexible and semi-rigid PVC compounds may contain a range of 5-50% by weight of DEHP or 5-15% of DEHA, or a combination of both plasticizers. Both DEHP and DEHA are reportable under EPCRA Section 313.

Instruction: Avoid breathing fumes during mass melting process of vinyl pellets.
 Use adequate exhaust ventilation and good housekeeping programs.

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Heat Stabilizers

Heat stabilizers are based on metallic and non-metallic ingredients such as cadmium, lead and tin compounds, and are regulated materials which appear on certain State Hazardous Substance Lists. Only water soluble barium compounds are listed, however, none of the stabilizers used in ALPHA flexible and rigid PVC compounds are water soluble barium. Most stabilizers do not carry CAS number designations, since these are a mixture of proprietary trade secret ingredients. While barium, cadmium, lead and zinc compounds are all reportable under Section 313 of EPCRA, these metals as heat stabilizer components are only present at concentrations below the reporting threshold.

Lead compounds as a class are subject of OSHA Standard 29 CFR 1910.1025 and appear on various State Hazardous Substance List (New Jersey's). The hazardous ingredients present may be inorganic lead compounds, and organic lead soaps. The OSHA PEL is 0.05 mg/m3.

Cadmium and Zinc Compounds - While at the present only metallic cadmium (CAS No. 7440-43-9) is regulated, OSHA is currently in the process of developing new regulations for cadmium compounds. Zinc stearate is regulated at a 10 mg/m3 TWA level.

Tin compounds - The OSHA PEL of organic tin compounds is 0.1 mg/m3 of air (as tin) under 29 CFR 1910.1000.

Most flexible and rigid PVC compounds may contain heat stabilizers in the range of 0.25% to 3.0% by weight which (with the exception of tin compounds in certain rigid PVC and lead in flexible compounds) are generally under the 1% threshold disclosure level for metal (in heat stabilizers) required by State regulations under the Right-To-Know Act.

Pigments

Titanium Dioxide (TiO2) pigment (CAS No. 13463-67-7; CAS Name: Titanium Oxide) is a Material Transportation Bureau regulated substance under 49 CFR 172.102.

It is also regulated as an air contaminant by the U.S. Department of Labor (OSHA) under Title 29 CFR 1910.1000. OSHA has ruled that an employee's exposure to Titanium Dioxide in any 8-hour work shift of a 40 hour work week shall not exceed a Time Weighted Average of 10 mg/m3 in air.

Opaque flexible and rigid PVC compounds may contain 0.5% to 10% of TiO2 pigment (non-dusting form). The OSHA regulations are not applicable to our customers using these compounds in pelletized form.

Some vinyl compounds may contain lead based pigments. Such pigments may be present at concentrations that are reportable under Section 313 of EPCRA. If so, our customers are notified of this fact in special letters.

For safe handling of rigid and flexible compounds, good housekeeping, coupled with efficient ventilation of the facility is recommended.

Fillers

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Amorphous silica (CAS No. 68855-54-9) is an OSHA regulated substance under 29 CFR Part 1910 with a TWA of 6 mg/m³, and appears on various State Hazardous Substance Lists, including New Jersey.

Certain flexible and rigid PVC compounds contain amorphous silica in the range of 1% to 30% by weight of the compound.

For Antimony Trioxide (CAS No. 1309-64-4), the OSHA (PEL) TLV is 0.5 mg/m³ of air (as antimony). Selected flexible or rigid PVC compounds may contain 5 to 15% concentration of Antimony Trioxide, used in non-dusting "encapsulated" form as a flame retardant.

Calcium carbonate (CAS No. 1317-65-3) may be present at 50% by weight or more; it is regulated by OSHA at 15 mg/m³ dust TWA (respirable fraction: 5 mg/m³).

In combination with efficient ventilation and good housekeeping programs, it should be possible for a typical processing plant using ALPHA's flexible or rigid PVC compounds (containing these additives) not to have to r area.

USER'S RESPONSIBILITY

Information supplied in this Material Safety Data Bulletin cannot be expected to cover all individual situations. Since the user of Alpha PVC compounds has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if or where precautions, in addition to those described herein this bullet are required. Any health hazard and safety information contained herein should be passed on to your employees or subsequent customers.

Disclaimer of Liability

As the conditions of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this material. Information contained herein is believed to be true and accurate but all statements or suggestions are made without any warranty, expressed or implied, regarding the accuracy of information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable Federal, state and local laws and regulations remains the responsibility of the user.