1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Manufacturer's name : PETROQUIMICA COLOMBIANA S.A., PETCO.
Plant address : Mamonal Km 8 - P.O. Box 1707 - Cartagena de Indias – Colombia - South America.
Sales office address : Carrera 9A No 99 – 02, 10th floor – P.O. Box 14451 - Santa Fé de Bogotá – Colombia – South America.
Telephone, Plant : (575) 668-5411 / 668-5900
Fax, Plant : (575) 668-5111
Telephone, Sales : (571) 623-1899
Fax, Sales : (571) 622-9180 / 622-9117
Web page : www.petco.com.co
Plant : aberastegui@petco.com.co
Export Sales : amejia@petco.com.co
Local Sales : jgonzalez@petco.com.co / afernandez@petco.com.co
Technical Services : rpinaud@petco.com.co

2. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name : Acetic acid ethenyl ester, polymer with chloro-ethene.
Synonyms : Polyvinyl chloro-acetate.
Chemical formula : \((C_4H_6O_2 - C_2H_3Cl)_n\)

PERCENTAGE:

WT : 98.75 Minimum

EXPOSURE LIMITS:
SEE SECTION 3. HAZARDS IDENTIFICATION.

HAZARDOUS INGREDIENTS:

Vinyl copolymer resins contain small amounts of residual vinyl chloride monomer (Chemical Abstract Service, CAS, Number: 75-01-4) and vinyl acetate monomer (Chemical Abstract Service, CAS, Number 108-05-4). Extensive product and process improvements have resulted in the reduction of residual vinyl chloride monomer to average levels of less than or equal to 38 parts per million (ppm) and residual vinyl acetate monomer to average levels of less than or equal to 2500 ppm in all grades of PETCO copolymer resins.

SEE SECTION 16. OTHER INFORMATION (EXPOSURE LIMITS IN THE WORKPLACE AND HAZARDOUS SUBSTANCES).

LISTED ON (List Legend Below):

00 19 22 23 50

---

108 – 05 – 4  ACETIC ACID ETHENYL ESTER

EXPOSURE LIMITS: PERCENTAGE:

PEL: 10 ppm; 30 mg/m³, TWA
STEL: 20 ppm; 60 mg/m³
TLV: 10 ppm; 35 mg/m³, TWA, A3
STEL: 15 ppm; 53 mg/m³

VOL: ND
WT: 0.04 – 0.70

COMMON NAMES: Vinyl acetate *.

LISTED ON (List Legend Below):
00 02 13 18 21 22 45 50 51

---

75 – 01 – 4  CHLORO – ETHENE.

EXPOSURE LIMITS: PERCENTAGE:

PEL: See 1910.1017
TLV: 5 ppm; 13 mg/m³, TWA, A1

VOL: ND
WT: 0 – 0.015

COMMON NAMES: Monochloroethylene.

Vinyl chloride *.

Vinyl chloride monomer.

LISTED ON (List Legend Below):
00 02 06 08 11 15 18 21 22 45 50 51

---
3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

*******************************************************************************

* FUMES PRODUCED IN PROCESSING MAY IRRITATE THE EYES AND RESPIRATORY TRACT. *
* VAPORS OR MISTS FROM DECOMPOSITION PRODUCTS MAY BE IRRITATING. *
* DUST MAY BE IRRITATING TO EYES AND RESPIRATORY TRACT.
* ACCUMULATION OF DUST OF ANY NATURE OR TYPE MAY REDUCE LUNG FUNCTION. *
* White powder or granules.
*******************************************************************************

HEALTH HAZARD DATA:

Dust Exposure Limits.

Threshold Limit Value, TLV.

- In the specific case of the PVC resin powder, the American Conference of Governmental Industrial Hygienists (ACGIH) is presently (December/2002) actively engaged defining this value. The current classification for PVC dust is “Particulates (Insoluble) Not Otherwise Specified (PNOS)”, and its TLV limits values are the following:

  Total powder = 10 mg/m³, Time Weighted Average (TWA).
  Breathable powder = 3 mg/m³, Time weighted Average (TWA).
Those particles whose size is less than 10 microns are defined as breathable powder. In general, the suspension PVC copolymer resins have an average particle size of 100 microns approximately.

- There are no significant health hazards stemming from vinyl resin being present in the work environment different from those associated with the presence of inert particulate matter. Any of these effects are eliminated when dust exposure is reduced and/or adequate breathing protection is worn.

- While there is no evidence of a substantial risk to health, a British study found a small decrease in breathing capacity for workers who smoked and were exposed to vinyl resin dust. This decrease was about one-seventh of that caused by normal aging and about equal to that expected with a one-pack-a-day cigarette smoker. There was not a significant decrease in breathing capacity from inhalation of vinyl resin dust by non-smokers.

- Routine inhalation of dust of any kind should be avoided. Exercise care when dumping bags, sweeping, mixing or doing other tasks which can create dust. Where large amounts of any dust may occur, wear a respirator approved by OSHA / Mine Safety and Health Administration (MSHA) to protect against nuisance dust.

Exposure to Fumes During Processing of Vinyl Resin.

- No adverse health effects are expected from processing vinyl resin when potential exposures are minimized by good industrial hygiene practice and adequate ventilation. Nevertheless, at processing temperatures, the sum total of all ingredients in a vinyl-based compound (e.g., vinyl resin, stabilizer, lubricant, modifier, etc.) may emit fumes and vapors that are irritating to the respiratory tract and eyes of some sensitive people. This irritating effect depends upon processing techniques and temperatures, volume processed and, most importantly, the effectiveness of exhaust ventilation provided to the process area.

Exposure to Decomposition and/or Combustion Products.

- Inhalation of decomposition and/or combustion products, especially hydrogen chloride, will cause irritation of the respiratory tract, eyes and skin. Depending on the severity of exposure, physiological response will be coughing, pain and inflammation. Individuals with bronchial asthma and other types of chronic obstructive respiratory diseases may develop bronchospasm if exposure is prolonged.

SPECIAL NOTE: Hydrogen chloride is detectable by its sharp, pungent odor in concentrations as low as 1-5 ppm. Low concentrations (below 50 ppm), if tolerated, are not harmful in the case of short-term exposures, but do provide excellent warning properties by causing coughing or irritation. Because the protective response is so strong, humans are rarely submitted to damaging concentrations; instead, there is an unmistakably urge to leave the area. Repeated or prolonged
exposure to high concentrations can cause eye and respiratory damage. In studies sponsored by the Federal Aviation Administration (FAA), no incapacitation, no impairment to escape and no significant post-exposure effects occurred in baboons exposed to hydrogen chloride up to 11,400 ppm (1.14%). OSHA has established a ceiling limit of 5 ppm for workplace exposure to hydrogen chloride.

SEE SECTION 16. OTHER INFORMATION (EXPOSURE LIMITS IN THE WORKPLACE AND HAZARDOUS SUBSTANCES).

Emergency and First Aid Procedure.

If irritation persists from exposure to processing vapors or decomposition products, remove the affected individual from the area. Call a physician. Provide protection before allowing reentry.

SEE SECTION 4. FIRST AID MEASURES.
SEE SECTION 11. TOXICOLOGICAL INFORMATION.

POTENCIAL HEALTH EFFECTS OF VINYL COPOLYMER RESINS:

Routes of Entry.

Inhalation and ingestion.

Target Organs.

Skin, eyes and respiratory tract.

Irritancy.

Fumes produced in processing may irritate the eyes and respiratory tract.

Sensitizing Capability.

None known.

Reproductive Effects:

None known.

Cancer Information.

Classified as a Group 2B carcinogen by IARC.
SHORT-TERM EXPOSURE (ACUTE).

Inhalation.

Fumes produced in processing may irritate the eyes and respiratory tract.

Eyes.

Fumes produced in processing may irritate the eyes and respiratory tract.

Skin.

None known.

Ingestion.

Not a likely route of exposure.

Repeated Exposure (Chronic).

There are no known chronic effects from exposure to polyvinyl chloride.

Synergistic Materials.

None known.

Medical Conditions Aggravated by Exposure.

None known.

4. FIRST AID MEASURES

EYES:

IMMEDIATELY flush eyes with a directed stream of water for at least 15 minutes, forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissue. Washing eyes within several seconds is essential to achieve maximum effectiveness. GET MEDICAL ATTENTION.

SKIN:

Wash thoroughly with soap and water after handling.
INHALATION:

Remove to fresh air if safe to transport. Otherwise attempt to provide fresh air by ventilation. If breathing is difficult, have a trained person administer oxygen. If respiration or pulse has stopped, have a trained person administer Basic Life Support (Cardio-Pulmonary Resuscitation/Automatic External Defibrillator) and CALL FOR EMERGENCY SERVICES IMMEDIATELY.

INGESTION:

If swallowed, do not induce vomiting. Give large quantities of water. (If available, give several glasses of milk). If vomiting occurs spontaneously, keep airway clear and give more water. Never give anything by mouth to an unconscious person. GET MEDICAL ATTENTION IMMEDIATELY.

NOTES TO PHYSICIAN:

No specialized procedures. Treat for clinical symptoms.

5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARD DATA:

Ignition characteristics.


Vinyl resin by itself will not support combustion because it requires a higher concentration of oxygen for burning than that present in the earth's atmosphere. Vinyl resin can be forced to burn by continuous application of intense heat. In spite of all these considerations, it is not recommended to expose vinyl resins to open flame and proper clearance should be maintained with respect to them, when using portable heat devices, etc. Store flammable liquids away from vinyl resin.

* Flash-ignition temperature: The lowest temperature of air passing around a test specimen at which sufficient combustible gas is evolved from the specimen to be ignited by a small external pilot flame.

** Self-ignition temperature: The lowest temperature of air passing around a test specimen at which, in the absence of an ignition source, ignition occurs of itself, as indicated by an explosion, flame or sustained glow.
PETCO  
SUSPENSION PVC COPOLYMER RESINS.  

Extinguishing Media.

The PVC resins by itself will not support combustion. In those cases in which combustion of vinyl resin is being sustained by external means, removal and/or extinction of the fire source is the most effective initiative.

Extinguishing media should be appropriate to the nature of the ignition source.

SEE 7. HANDLING AND STORAGE.

Fire Fighting Procedures.

Keep unauthorized personnel removed and upwind. Wear NIOSH/MSHA approved positive pressure self-contained breathing apparatus and full protective clothing.

Combustion Products.

When forced to burn, a great proportion of the combustion gases from vinyl resin will be a combination of hydrogen chloride, carbon monoxide and carbon dioxide. Other gases will include small amounts of benzene, aromatic and aliphatic hydrocarbons.

The combustion products of vinyl resin, like those from other natural and synthetic materials, must be considered toxic. Like wood, paper and cotton, the major hazard is carbon monoxide. Carbon monoxide is an asphyxiate while hydrogen chloride is an irritant. When vinyl is burned, it will have a detectable, pungent odor.

Unusual Fire and Explosion Hazards.

- Hydrogen chloride has a corrosive effect on metals. Affected equipment surfaces and unprotected structural elements of buildings should be washed to remove corrosive deposits as soon as possible after depositions have occurred.

- Vinyl resin is not considered to be a dust explosion risk. The potential hazard has been evaluated using the Hartman Vertical Tube Apparatus. Data have also been reported by the National Fire Protection Association (NFPA).

  (1) In the Hartman apparatus, vinyl resin representing fine particles size (2 microns), medium particle size (75 microns) and large particle size (130 microns) does not ignite or explode in concentrations up to 2.0 gm/liter.

  (2) The NFPA shows "fine" particle size vinyl resin to have a low order of risk.*

<table>
<thead>
<tr>
<th>Explosibility index</th>
<th>&lt;=0.1 (very weak)</th>
</tr>
</thead>
</table>

REVISION # 5, March 17/2004
Ignition sensitivity : <=0.1 (very weak)
Explosion severity : <0.1 (weak)
Ignition temp., dust cloud : 660°C (1200°F)

* Source: NFPA 654-1975, "Prevention of dust explosions in the plastics industry." <=0.1 means that ignition of the dust cloud is not obtained by a spark or flame source.

As a precaution, it is prudent to employ standard safety measures used in handling finely divided organic powders.

This product is nonexplosive under normal conditions of use. At high temperatures this product can decompose to give off hydrogen chloride.

The minimum ignition energy for explosion of resin dust is much higher than that of natural materials such as corn starch and flour and also exceeds those of other plastic materials. Care should be taken in addressing ignition sources in working and handling areas.

Smoke generated when resin burns is within the narrow limits of toxicity of smoke from all commonly used materials. The primary toxic combustion products are carbon monoxide and hydrogen chloride. Carbon monoxide is an asphyxiant generated by all natural and synthetic organic materials when subjected to incomplete combustion and is the principal toxicant in fire atmospheres. The doses of carbon monoxide and hydrogen chloride needed to cause lethality are very similar. Resin combustion products include many other compounds, such as carbon dioxide and water from complete combustion, but do not include phosgene, acrolein, or vinyl chloride.

**Sensitivity to Mechanical Impact:**

Not applicable.

**Sensitivity to Static Discharge:**

Electrostatic charge may build up during handling. Grounding of equipment is recommended.

**SEE SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION.**

**6. ACCIDENTAL RELEASE MEASURES**

**PERSONAL PRECAUTIONS:**

Evacuate unnecessary personnel and eliminate all sources of ignition.

**ENVIRONMENTAL PRECAUTIONS:**
TCLP: This product or others of similar composition, in the as shipped condition have been tested and found to be not hazardous using the USEPA’s (United States Environmental Protection Agency) Toxicity Characteristic Leaching Procedure (TCLP – 40 CFR 261, Appendix II). Any physical or chemical modification of this products may change the TCLP test results.

METHODS FOR CLEANING UP:

Sweep or vacuum spills. To minimize dust, vacuum cleaning is preferred.

SEE SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION.

7. HANDLING AND STORAGE

HANDLING:

Use good housekeeping practices. As with handling of all powdered materials, accumulations of the product should be removed from settling areas such as rafters, roofs, building columns, and ductwork to eliminate any secondary potential dust explosion or fire hazards.

Use with adequate ventilation.

SPECIAL MIXING AND HANDLING INSTRUCTIONS:

Normal Melt Processing. Virtually all thermoplastic materials will emit fumes and/or vapors when heated to processing temperatures. The concentration and composition of these vapors will depend upon variables such as the specific compound formulation and processing method and temperature. Always use the product under well-ventilated conditions and avoid breathing of process vapors. For personal hygiene, wash thoroughly after handling resin, especially before eating, smoking or using toilet facilities. Do not store or consume food in processing areas. Do not use processing equipment to heat food.

Cleanup following normal-melt processing should be performed under well-ventilated conditions. Compound based upon vinyl resin may be held at process temperatures for a short time without significant thermal degradation. However, it should be recognized that exposure to either elevated temperature or excessive heat history (time) will result in decomposition. Equipment should not be shut down for extended time periods with the product in it, or decomposition and possible corrosion of unprotected metal may result. If dies and screws are not to be cleaned manually, then compound should be purged from processing equipment prior to shutdown using special vinyl purge compound or a compatible thermoplastic such as general purpose ABS (do not use flame-retarded or halogen-containing grades for this purpose).
In case of power loss or other mishap, shut off the machine and dismantle the die assembly as soon as possible before degradation or decomposition begins (which may be evidenced by gassing and "popping" sounds). Before the die can be disassembled, dangerously high pressure may occur in the die system. In this event, shut off the machine, clear the area of personnel and wait until decomposition stops. Thoroughly ventilate area. Remove and disassemble the die system. These are guidelines only. Refer to technical service reports and equipment manufacturer's recommendations for specific procedures.

Regrinding scrap normally generates substantial heat. Cool regrind before placing it in containers. The excellent insulating quality of vinyl will prevent heat in the center of a container from escaping, potentially resulting in slow thermal decomposition of the material. This may not only render the product unsatisfactory for further processing but also result in fumes and vapors being released into the workplace atmosphere.

Remove vinyl resin from walkways and floors to prevent slippery footing.

Sprinklered warehouse areas are typically recommended. Although vinyl resin by itself will not support combustion, materials such as wooden pallets, cardboard boxes and other combustibles can provide sufficient fuel to cause vinyl to burn.

Compounding vinyl resin. Many of the common compounding ingredients which are mixed with vinyl resin may require special handling, especially respiratory protection. It is the user's responsibility to obtain and follow the recommended precautions from the individual additive supplier.

SPECIAL NOTE: Vinyl compound at or above normal processing temperature must never be allowed to accumulate in thick masses, or it will begin to thermally decompose and to swell due to internal gassing. Gassing may cause a thick mass to explode if its outside surface is hardened. Molten waste should be collected as strands or flattened to 2-inches or less, and quenched in a drum of cold water provided for this purpose. Decomposing material should be removed to a well-ventilated area, preferably outdoors.

STORAGE:

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

The resin by itself will not support combustion, however, materials such as wooden pallets, paper bags, cardboard boxes, and other combustibles can provide sufficient fuel to cause the product to burn.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION
ENGINEERING CONTROLS:

Handle product in a well ventilated area.

If product is handled in an open system, the use of process enclosures, local exhaust ventilation, and/or other engineering controls should be considered to control airborne levels to below recommended exposure limits, or below acceptable levels where there are no limits.

PERSONAL PROTECTION:

Respiratory.

For conditions of use where exposure to dust or mist is apparent, a NIOSH approved half-face respirator may be worn.

A respiratory protection program that meets 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant use of a respirator.

Abnormal conditions such as equipment malfunction, use of improper equipment or procedures, or hang-up or stagnation of vinyl-based compound during processing may cause decomposition. Employees involved in removing decomposing material should be provided with suitable air-supplied respirators, such as MSHA / National Institute for Occupational safety and Health (NIOSH) approved positive pressure self-contained breathing apparatus.

Eye/face.

Wear safety glasses with side shields (ANSI Z87.1).

Skin.

Wear protective gloves such as leather, canvas or cotton to minimize skin contact.

Other.

Emergency shower and eyewash facility should be in close proximity (ANSI Z358.1).

SPECIAL PROTECTION INFORMATION:

Ventilation.

Provide effective exhaust ventilation to draw dust and/or fumes away from workers to prevent routine inhalation. Compounding, hot melt processing (extruding, molding, etc.), cutting or sawing, machining, regrinding, thermoforming, heat welding, and other processing or post-processing
operations involving heat sufficient to result in polymer breakdown should be examined to ensure adequate ventilation.

Ventilation guidelines and techniques may be found in the following publications:


SEE SECTION 2. COMPOSITION / INFORMATION ON INGREDIENTS.
SEE SECTION 3. HAZARDS IDENTIFICATION.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DATA:

The following data are typical, not specifications:

Appearance : White, free-flowing powder.
Specific Gravity : 1.36 – 1.38 approximately (once compounded and fused).
Solubility in water : Negligible
Odor : Practically odorless or bland odor.
Particle Size, microns:
  PVC suspension copolymer resin  80 – 120
VOC (% by wt; g/l) : Not applicable

Other: Characteristics such as vapor pressure, vapor density, boiling point and evaporation rate do not apply to solid materials such as vinyl resin.

10. STABILITY AND REACTIVITY

STABILITY AND REACTIVITY:

Stability : Stable
Hazardous polymerization : will not occur.
Hazardous decomposition products : PVC resin processing may result in the release of very low levels of vinyl chloride, hydrogen chloride, carbon monoxide, carbon dioxide and acetic acid. The
air concentration will be dictated by processing conditions, room ventilation and production rates.

Reacts with: None.

Incompatibility (materials to avoid): Avoid contact with acetal or acetal copolymers and with amine containing materials during processing. At processing conditions these materials are mutually destructive and involve rapid degradation. Thoroughly purge and mechanically clean processing equipment to avoid even trace quantities of these materials from coming in contact with each other. Prevent cross contamination of feedstocks.

Comments: Avoid heat, sparks and open flames.

11. TOXICOLOGICAL INFORMATION

TOXICOLOGY OVERVIEW:

108-05-4 ACETIC ACID ETHENYL ESTER.

Acute Oral LD50: (rat) 2920 mg/kg.
Acute Dermal LD50: (rabbit) 2335 mg/kg.
Acute Inhalation LC50: (rat, 2hr) 4000 ppm.
Primary Eye Irritation: (rabbit) mild.

75-01-4 CHLORO – ETHENE.

Acute Oral LD50: (rat) 500 mg/kg.
Acute Inhalation LC50: (rat) 150,000 mg/kg.

Vinyl chloride has been demonstrated to be mutagenic in cultured cell tests, insects and laboratory animals. It is also listed as a human carcinogen by OSHA, IARC (GROUP 1) and NTP. Long term exposure to vinyl chloride has caused liver and other cancers in animals and humans. At high concentrations vinyl chloride can cause central nervous depression, affect heart rhythms and cause liver and kidney damage. Prolonged and repeated exposure may result in changes in the blood system and loss of bone from finger tips.

For further information call or write the address shown on page 1 of this MSDS.

12. ECOLOGICAL INFORMATION

TOXICITY:
No data available. This material is believed to be non-toxic to aquatic life.

PERSISTENCE:

No data available. This material is believed to be likely to persist in the environment.

BIOACCUMULATION:

No data available. This material is believed to be unlikely to bioaccumulate.

For further information call or write the address shown on page 1 of this MSDS.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD:

Dispose of all waste and contaminated equipment in accordance with all applicable federal, state and local health and environmental regulations.

14. TRANSPORT INFORMATION

TRANSPORTATION:

- DOT information : Not regulated.

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

This product contains a toxic chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 372.

SEE SECTION 2. COMPOSITION / INFORMATION ON INGREDIENTS: LIST LEGEND 02.

OSHA Standard 29 CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, material safety data sheets, training and access to written records. We request that you, as it is your legal duty to, make all information in this Material Safety Data Sheet available to your employees.

To aid our customers in complying with regulatory requirements, SARA Title III Hazardous Categories for this product are indicated below. If the word “YES” appears next to any category, this
product may be reportable by you under the requirements of 40 CFR 370. Please consult those regulations for details.

TSCA:

All components of this product that are required to be on the TSCA inventory are listed on the inventory.

SARA/TITLE III HAZARD CATEGORIES:

Immediate (Acute) Health : NO Reactive Hazard : NO
Delayed (Chronic) Health : YES Sudden Release of Pressure : NO
Fire Hazard : NO

HAZARD CODE KEY:

4 = Extreme
3 = High
2 = Moderate
1 = Slight
0 = Insignificant

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM, NATIONAL PAINT AND COATINGS ASSOCIATION (HMIS) HAZARD RATINGS:

<table>
<thead>
<tr>
<th>Hazard Type</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health hazard</td>
<td>1</td>
</tr>
<tr>
<td>Flammability Hazard</td>
<td>1</td>
</tr>
<tr>
<td>Reactivity Hazard</td>
<td>0</td>
</tr>
<tr>
<td>Personal protection</td>
<td>*</td>
</tr>
</tbody>
</table>

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

STATE REGULATIONS:

State of California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

WARNING: This product contains a chemical known to the State of California to cause cancer.

SEE SECTION 2: COMPOSITION / INFORMATION ON INGREDIENTS LIST LEGEND FOR APPLICABLE STATE REGULATION.
Consult local laws for applicability.

INTERNATIONAL REGULATIONS:

Consult the regulations of the importing country.

CANADA:


16. OTHER INFORMATION

EXPOSURE LIMITS IN THE WORKPLACE:

Vinyl Chloride Monomer (VCM). Employee exposure to vinyl chloride monomer (CAS Number: 75-01-4), a cancer suspect agent, is regulated in the United States of America by OSHA (29 CFR1910.1017). The current regulation requires that no employee may be exposed to VCM concentrations greater than 1.0 ppm (parts per million by volume) averaged over any eight-hour period or 5.0 ppm averaged over any period not exceeding 15 minutes. The action level is 0.5 ppm averaged over any eight-hour work day.

The regulation applies to the manufacture, packaging, repackaging, storage, handling or use of vinyl chloride or polyvinyl chloride, but does not apply to the handling or use of fabricated products made of polyvinyl chloride. Typically, purchasers of vinyl resins to be compounded or further processed must comply with the permissible exposure limits set by OSHA. Moreover, the regulation requires a program of initial monitoring in each facility to determine if there is any employee exposure in excess of the action level without the use of respirators. If monitoring does not find VCM above 0.5 ppm, no further action is necessary. Refer to OSHA regulations (including 29CFR1910.1017) for complete details.

SPECIAL NOTE: Vinyl chloride warning labels on resin containers. Monitoring of vinyl processing and fabricating plants and modeling studies show that the action level (0.5 ppm) cannot be exceeded when residual VCM is at or below 8.5 ppm in PETCO vinyl resin. Shipping containers for these resins are not labeled by PETCO unless a customer specifies otherwise. Vinyl prime, off-grade or scrap resin is labeled if residual monomer exceeds 8.5 ppm. The OSHA regulation requires that the label says "Polyvinyl chloride contains vinyl chloride. Vinyl chloride is a cancer suspect agent."

Polyvinyl chloride resin is not a cancer suspect agent. It is the trace amount of unreacted vinyl chloride monomer that must be controlled, not the vinyl itself.
Although some containers may be labeled, this does not necessarily mean that the employee exposure to VCM will exceed permissible exposure limits. Using "worst case" conditions of thermal processing, studies show that more than 30 ppm of unreacted monomer in vinyl resin is needed to cause 0.5 ppm to be present in the atmosphere of a hot, poorly ventilated workplace. Good ventilation in those areas where VCM might concentrate - such as where containers are stored and first opened, where materials are mixed and where resin is melted - will further ensure a work environment virtually free of VCM.

HAZARDOUS SUBSTANCES:

None of the following materials designated as toxic and hazardous by the U.S. Department of Labor (OSHA) are used to manufacture PETCO vinyl resin nor are they anticipated by-products in our production process:


1001 Asbestos
1002 Coal tar pitch volatiles
1003 4-nitrophenol
1004 Alpha-naphthylamine
1006 Methyl chloromethyl ether
1007 3,3'-dichlorobenzidine (and its salts)
1008 Bis-chloromethyl ether
1009 Beta-naphthylamine
1010 Benzidine
1011 4-aminodiphenyl
1012 Ethyleneimine
1013 Beta-propiolactone
1014 2-acetylaminofluorene
1015 4-dimethylaminoazobenzene
1016 N-nitrosodimethylamine
1017 Inorganic arsenic
1029 Coke oven emissions
1043 Cotton dust
1044 1,2-dibromo-3-chloropropane
1045 Acrylonitrile
1047 Ethylene oxide

No lead, mercury, other heavy metals or heavy metal compounds and no polychlorinated biphenyls (PCB) or polybrominated biphenyls (PBB) are used to manufacture PETCO vinyl resins. These materials are ubiquitous and trace quantities may be found in the environment.

MSDS LEGEND:
17. WARNING LABEL INFORMATION

SIGNAL WORD:

Caution.

HAZARD WARNINGS:

Fumes produced in processing may irritate the eyes and respiratory tract.

Dust may reduce lung function.

Contains vinyl chloride. Vinyl chloride is a cancer-suspect agent.

PRECAUTIONS:

Avoid breathing dust, vapors or mist.

Avoid contact with eyes and clothing.

Avoid generation of dust.
Keep container tightly closed and properly labeled.

Keep away from heat, sparks, pilot lights, welding operations and open flame.

Use with adequate ventilation.

Wash thoroughly after handling.

**FIRST AID:**

**Eyes.**

Immediately flush eyes with a directed stream of water for at least 15 minutes, forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissues. Washing eyes within several seconds is essential to achieve maximum effectiveness. GET MEDICAL ATTENTION IMMEDIATELY.

**Skin.**

Wash thoroughly with soap and water after handling.

**Inhalation.**

Remove to fresh air if safe to transport. Otherwise attempt to provide fresh air by ventilation. If breathing is difficult, have a trained person administer oxygen. If respiration or pulse has stopped, have a trained person administer Basic Life Support (Cardio-Pulmonary Resuscitation/Automatic External Defibrillator) and CALL FOR EMERGENCY SERVICES IMMEDIATELY.

**Ingestion.**

No effect expected. If large amounts are ingested, GET MEDICAL ATTENTION.

**IN CASE OF SPILL OR LEAK:**

Sweep or vacuum spills and place in containers for recovery or disposal.

**FIRE:**

Use carbon dioxide, dry chemical, water or other agent suitable for surrounding fire. Decomposition in an open flame may yield hydrogen chloride gas and acetic acid.

**HANDLING AND STORAGE:**

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REVISION # 5, March 17/2004
PETCO     Material Safety Data Sheets
SUSPENSION PVC COPOLYMER RESINS.
Store in a clean, dry, well ventilated area away from heat.

DISPOSAL:
Dispose of in accordance with federal, state and local regulations.

INFORMATION REQUIRED BY FEDERAL, STATE OR LOCAL REGULATIONS:
This product contains:

<table>
<thead>
<tr>
<th>CAS#</th>
<th>NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>9003-22-9</td>
<td>Acetic acid ethenyl ester, polymer with chloro-ethene.</td>
</tr>
<tr>
<td>108-05-4</td>
<td>Acetic acid ethenyl ester</td>
</tr>
<tr>
<td>75-01-4</td>
<td>Chloro – ethene</td>
</tr>
</tbody>
</table>

HMIS: HEALTH 1  FLAMMABILITY 1  REACTIVITY 0

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