



B. F. Goodrich Chemical Company

A DIVISION OF THE B. F. GOODRICH COMPANY

6100 OAK TREE BOULEVARD • CLEVELAND, OHIO 44131 • PHONE: 216-524-0200

February 12, 1975

RLSP-139-75

Gentlemen:

On October 1, 1974, the Occupational Safety and Health Administration (O. S. H. A.) announced the Permanent Vinyl Chloride Health Standard for reducing worker exposure to vinyl chloride monomer. In accordance with this action, we have revised the Material Safety Data Sheets for our Geon vinyl chloride latexes.

We are enclosing revised Material Safety Data Sheets to be noted and used in place of those which, according to our records, were sent to you previously. Also enclosed is a copy of our L-13 Bulletin, Handling and Storing Latexes, and a copy of a January 6, 1975, letter from Mr. R. L. Steller, Product Director of Latex and Specialty Chemicals. The letter describes the current situation with respect to residual vinyl chloride monomer contained in our Geon vinyl chloride latexes.

Please let us know if there are questions.

Sincerely,

Robert L. Spencer

Robert L. Spencer,
Technical Service Manager - Latex

CRW

Enclosures

4/24/75
Send 1 copy to each line:
Date 11: Mat. S. Data Sheets

~~*Re Jan 1975*~~

Dr. A. R. Adams / Dick Byrnes
E. Primeau
D. Fromme / PVC Plant
R. Spiegelhalter
Personnel / Safety

W. H. [Signature]

AP00034580

B. F. GOODRICH CHEMICAL COMPANY
MATERIAL SAFETY DATA SHEET
GEON[®] LATEX

SECTION I

Manufacturer's Name

B.F. Goodrich Chemical Company

Emergency Telephone Number

216-524-0200

Address

6100 Oak Tree Boulevard
Cleveland, Ohio 44131

Trade Name

Geon 450X3

Chemical Name and Synonyms

Latex

Formula

Vinyl Chloride/Vinylidene
Chloride/Acrylic

Chemical Family

Copolymer

SECTION II - HAZARDOUS INGREDIENTS

A. Vehicle

The latex is a uniform, synthetic anionic, colloidal dispersion of a high-molecular-weight copolymer in water.

B. Solvents

The latex contains no photochemically-reactive solvents -- no volatile organic solvents of any kind.

C. Heavy Metals

We do not utilize lead, mercury, or any other heavy metal or heavy metal compound in the manufacture of our vinyl chloride/vinylidene chloride/acrylic latexes. However, due to the ubiquitous nature of these materials, trace quantities (ppm or ppb) can probably be found by using modern analytical techniques.

D. Vapors

1. Vinyl chloride/vinylidene chloride/acrylic latex contains residual vinyl chloride monomer, a cancer-suspect agent. Refer to Section V and addendum attached.
2. The latex contains residual vinylidene chloride monomer. Vinylidene chloride monomer is not as volatile as vinyl chloride monomer, but it can be vaporized at elevated temperatures. The proposed T.L.V. for vinylidene chloride is 10 ppm (American Conference of Governmental Industrial Hygienists - 1974). Refer to Section V.
3. The latex is free of sulfur dioxides and oxides of nitrogen. Nor would these materials be expected to be produced during typical drying operations. Water is the primary volatile material given off during the drying cycle.

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SECTION III - PHYSICAL DATA

Boiling Point ($^{\circ}$ F.)
Water - 212 $^{\circ}$ F.

Specific Gravity ($H_2O = 1$)
1.1 - 1.2

Solubility in Water
Latex is water dilutable -
polymer is insoluble

Percent Volatile by Weight (%)
Water: 44 - 50%

Appearance and Odor
White-to-cream colored liquid.
Slight characteristic odor.

pH
7.8

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Extinguishing Media
For dry polymer - water

Special Fire Fighting Procedures

When dry polymer is forced to burn, polyvinyl chloride will contribute mainly CO_2 , CO, and HCl gases and smoke. Self-contained breathing apparatus should be used in closed areas such as warehouses.

Unusual Fire and Explosion Hazards

NOTE: Vinyl chloride monomer is explosive in a range of 4% to 22% by volume in air. See page 7 of L-13 Bulletin. Our vinyl latexes are stripped of residual monomer to less than 0.01% by weight (on latex solids weight). At the specification maximum of 0.01% residual monomer, an explosive level cannot be attained in the vapor space of a closed vessel at normal latex storage temperatures. See pages 1 and 5 of L-13 Bulletin for our recommended storage temperatures. All storage tanks should be vented to the outside.

SECTION V - HEALTH HAZARD DATA

Threshold Limit Value

See O. S. H. A. Chapter XVII, Part 1910, Federal Register, Volume 39, No. 194 (10-4-74) and addendum attached. The proposed T.L.V. for vinylidene chloride monomer is 10 ppm (American Conference of Governmental Industrial Hygienists - 1974).

Effects of Overexposure

Vinyl chloride/vinylidene chloride/acrylic latex contains vinyl chloride monomer, a cancer-suspect agent. Open, handle, and use under well-ventilated conditions. Refer to O. S. H. A. regulation above. The latex contains residual vinylidene chloride monomer. In 1974, the American Conference of Governmental Industrial Hygienists proposed a T.L.V. of 10 ppm. In October, 1974, reports were received from Europe that exposure of Wistar rats to high concentrations of vinylidene chloride monomer resulted in some increased incidence of abdominal tumors. Further experimental testing is being initiated both in Europe and U. S. A. Liquid contact with eyes may cause irritation.

Emergency and First Aid Procedures

1. DO NOT INGEST - If ingested, contact physician.*
2. AVOID SKIN CONTACT - Wash thoroughly with cold water any part of the body which comes in contact with latex.

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Emergency and First Aid Procedures (continued)

3. AVOID EYE CONTACT - Immediately flush eyes with water for at least 15 minutes. Contact physician.*

*NOTE: The pH of the latex should be given to the attending physician.

SECTION VI - REACTIVITY DATA

Stability

Stable X
Unstable

Hazardous Decomposition Products

See Section IV

Hazardous Polymerization

May Occur
Will not Occur X

SECTION VII - SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled

Dam up, mop or absorb on inert material, and place into containers. If spilled in enclosed area, ventilate. Polymer can be separated from water through coagulation by the addition of alum. NOTE: Spilled latex is very slippery; use care to avoid falls. Latex will leave a film on drying. Remove saturated clothing and wash contacted skin areas with soap and water.

Waste Disposal Method

Sanitary landfill in accordance with federal, state, and local regulations.

SECTION VIII - SPECIAL PROTECTION INFORMATION

Respiratory Protection (Specify Type)

See Section V and addendum attached.

Ventilation

Exhaust to ventilate. Open, handle, and use under well-ventilated conditions.

Protective Gloves

Protective gloves suggested.

Eye Protection

Safety glasses suggested.

Other Protective Equipment

See Section IV.

SECTION IX - SPECIAL PRECAUTIONS

Precautions to be taken in Handling and Storing

Normal cleanliness. See attached L-13 Bulletin, Handling and Storing Latexes, and Section V of this data sheet and addendum attached.

These data are based on tests believed to be reliable. They are given only for your information and no warranty, express or implied, is made as we cannot guarantee the results of operations not under our direct control. The information in this publication is not intended as permission or recommendation to practice a patented invention without permission of the patent owner.

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ADDENDUM

On October 1, 1974, the Occupational Safety and Health Administration (O. S. H. A.) announced the Permanent Vinyl Chloride Health Standard (Title 29 - Labor, Chapter XVII, Part 1910) for reducing worker exposure to vinyl chloride monomer. The standard is detailed in the Federal Register, Volume 39, Number 194, October 4, 1974, pages 35890-35898.

As polyvinyl chloride latex is manufactured in the industry today, detectable quantities of vinyl chloride monomer remain in the product. While this may not result in detectable quantities in the general atmosphere in your plant, there are conditions under which residual monomer may accumulate to measurable amounts. It is the intent of this addendum to indicate the order of magnitude of the trace amounts of residual vinyl chloride monomer presently in our products at the time of manufacture and to point out potential areas of accumulation.

Geon latexes contain a maximum of 0.01% (based on latex solids weight) of vinyl chloride monomer. We are working diligently to reduce these trace amounts and progress is constantly being made.

Since vinyl chloride monomer is volatile, it is released from the latex gradually in storage and more rapidly under heat of drying and further processing. In all cases, Geon latexes should be opened, handled, and used under well-ventilated conditions. Refer to O. S. H. A. Standard for details.

Analysis has shown that areas where vinyl monomer might concentrate are:

- (1) In enclosed vessels such as bulk railcars, bulk trucks, storage tanks, and drums. The air space above the latex should be purged and monitored for vinyl monomer or adequate protection provided prior to exposure of personnel.
- (2) In processing areas such as compound preparation, spraying, or coating. Suitable ventilation should be provided.
- (3) In drying and curing areas. Normal good operating practice in exhausting volatiles may be sufficient.

The concentration of vinyl chloride monomer at the mandated exposure limits cannot be detected by odor so that suitable test equipment and methods must be used as indicated.

Intense technical efforts by us are resulting in a rapidly changing situation. As additional information becomes available, we shall keep you informed.

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B. F. Goodrich Chemical Company

A DIVISION OF THE B. F. GOODRICH COMPANY

6100 OAK TREE BOULEVARD • CLEVELAND, OHIO 44131 • PHONE: 216-524-0200

January 6, 1975

RLS-3-75

Gentlemen:

Over the past year, our company has attempted to provide our customers with information pertinent to the vinyl chloride monomer issue. My June 7, 1974 letter focused on the level of residual vinyl chloride monomer (RVCM) present in our PVC latex products and described handling and processing conditions where monomer accumulation could occur. A copy of this letter is enclosed for ready reference.

As noted in the reference letter, efforts toward reducing RVCM levels were underway. As a result of this exploratory effort and subsequent process development and design work, we can now project realistic time and monomer level targets for our PVC latex products. This information will doubtless be useful to processors that are now, or will soon begin, formulating plans for in-plant air quality evaluation and improvement actions.

A high efficiency process for residual monomer reduction has been selected and is expected to be operational by the third quarter. This timing estimate is based on a current schedule for delivery and installation of new process and control equipment. With design performance, an approximate 100 fold reduction in present RVCM levels will be attained. A 10 fold reduction will be achieved effective January 1, 1975, through process modifications utilizing available equipment. Manufacturing specifications will be changed accordingly and these changes are summarized below.

(1)
PVC LATEX

(2)
% RVCM - Solids Weight Basis

Approximate 1974 Average

0.1%

Target Manufacturing Specifications

January 1, 1975

September 1975

0.01% (maximum)

0.001% (maximum)

(1) Geon Latex products, excluding non-PVC Geon 660 series - includes Hycar 2600X189, a PVC modified acrylic latex.

(2) Corresponds to billing weight:

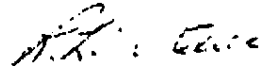
$$\% \text{ RVCM (wet wt. basis)} = \% \text{ RVCM (solids wt. basis)} \times \frac{\% \text{ Total Solids}}{100}$$

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While the January 1, 1975 specification of 0.01% (max.) will apply to all new latex production and subsequent bulk shipments, present warehouse drum inventories will be cleared before drum quantities of the lower RVCM product can be readily supplied. During this period of inventory clearing, we will attempt to supply trial quantities of the 0.01% specification product to drum customers that might want to measure the resulting impact on plant air quality. Such special requests can best be handled through direct communication with your area salesman.

The supply projections given here necessarily involve timing estimates that are dependent on equipment deliveries. You will be advised of any complications or delays which could affect these projections.

Sincerely,



R. L. Steller, Product Director
Latex and Specialty Chemicals

/p

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