



specialty chemicals DIVISION

DECHLORANE® PLUS 515

Data Sheet No. 345-C

DESCRIPTION

Dechlorane® Plus 515 flame retardant additive is a highly effective, chlorine containing crystalline organic compound prepared by grinding to free-flowing white powder.

TYPICAL DATA

Chlorine	65%
Melting Point	>350 °C
Density	1.8–2.0 g/cc
Vapor Pressure @ 200°C	0.006 mm of Hg
Average Particle Size, Microns	5 – 15

SOLUBILITY

<u>Solvent</u>	<u>Grams of Dechlorane® Plus 515 per 100 grams of solvent at 25°C</u>
Benzene	2.0
Xylene	1.0
Styrene	1.8
Trichloroethylene	1.4
Methyl Ethyl Ketone	0.7
n-Butyl Acetate	0.7
Hexane	<0.1
Methyl Alcohol	<0.1

APPLICATION

Dechlorane® Plus 515 is suggested for use as a non-plasticizing flame-retardant additive in polymeric system. Its application is in standard moldings. In applications requiring finer particle size such as films and sheets Dechlorane® Plus 25 is recommended. It is commonly used with antimony oxide synergist.

SHIPPING INFORMATION

	<u>Net Weight</u>	<u>Gross Weight</u>
Multi-Ply Paper Bag	50 Pounds	50½ Pounds

PRECAUTIONARY INFORMATION

Dechlorane® Plus 515 is relatively inert. Tests indicate that it is relatively non-toxic; however, since it has not been fully evaluated in all respects, prolonged contact with skin should be avoided. Precautions should be taken to avoid breathing the dust.

Mlt. 11-1634

May 1980

FOR MORE INFORMATION WRITE SPECIALTY CHEMICALS DIVISION, HOOKER CHEMICALS & PLASTICS CORP., NIAGARA FALLS, N. Y. 14302

HOOKER CHEMICAL

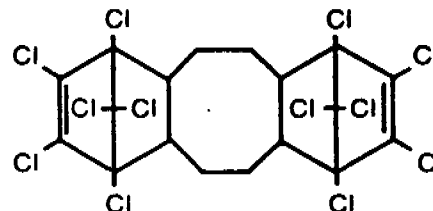
Data Sheet No. 344D

November 1981

Dechlorane® Plus 25

Description:

Dechlorane Plus 25 is a highly effective chlorine-containing organic flame retardant additive, prepared by grinding, to free flowing, white powder.



Hooker Specifications:

Appearance

Average Particle Diameter, Microns
(Fisher Subsieve Sizer)

Average % Retained on 325 Mesh

Screen (Wet Screen Analysis)

pH (Methanol-Water Extract)

Volatiles, % (4 hours at 100°C at 5mm Hg)

Color - Rd

Typical Data:

Chlorine

Melting Point

Density

Vapor Pressure @ 200°C

Average Particle Size, Microns

White, Crystalline, Free-Flowing Solid
5 Maximum

0.15 Maximum

6.0-8.0

0.15 Maximum

93 Minimum

65%

350°C (with decomposition)

1.8-2.0 g/cc

0.006 mm of Hg

2-5

Solubility:

Solvent

Benzene

Xylene

Styrene

Trichloroethylene

Methyl Ethyl Ketone

n-Butyl Acetate

Hexane

Methyl Alcohol

Grams of Dechlorane Plus 25
per 100 grams of solvent
at 25°C

2.0

1.0

1.8

1.4

0.7

0.7

0.1

0.1

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Use:

Dechlorane Plus 25 is used as a non-plasticizing flame-retardant additive in polymeric systems.

cost: \$2.69/lb
2.69/10

For more information write: HOOKER CHEMICALS & PLASTICS CORP., INDUSTRIAL CHEMICALS GROUP, NIAGARA FALLS, N.Y. 14302

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PL-0443 HW

Precautionary Information:

DECHLORANE® PLUS

CAUTION! Dust may be irritating to eyes and respiratory system.

NFPA



FIRE HAZARD RATING

Precautions

- Keep container closed.
- Insure adequate ventilation.
- Avoid contact with eyes.
- Avoid breathing dust.
- Wash thoroughly after handling.
- Wear approved chemical goggles, dust mask, gloves and clothing.
- Do not allow to sewers or waterways.
- Heating in excess of 275°C/ 525°F may cause degradation and release of toxic gases.

Handling & Storage

- In Case of:

FIRE:

- Use extinguishing agent suitable for surrounding fire.
- Use self-contained breathing apparatus and fully protective clothing.
- Fire may liberate toxic gases.

SPILL:

- Transfer into container for reclamation disposal.

DISPOSAL:

- Material that cannot be used or chemically reprocessed should be disposed of in a manner meeting government regulations.

+ First Aid +

- Get medical aid for all over over exposures.
- In case of eye contact, immediately flush eyes with a direct stream of water for at least 15 minutes while forcibly holding eyelids apart.
- If swallowed, do not induce vomiting, dilute by drinking water. If vomiting occurs, administer more water.
- Wash contaminated clothing before reuse.

Shipping Information:

Multi-ply Bag

Net Weight

50 pounds

Gross Weight

50 1/2 pounds

Dechlorane Plus 25 is not regulated by the Department of Transportation and, therefore, has not been assigned a DOT hazard classification.

Dechlorane Plus is listed in the Toxic Substance Control Act (TSCA) inventory under the CAS Number, 13560-89-9.

HOOKER INDUSTRIAL & SPECIALTY CHEMICALS

Data Sheet

Data Sheet No. 340
March, 1981

DECHLORANE® PLUS

- Toxicity Summary

<u>Study</u>	<u>Test Species</u>	<u>Result</u>
A. <u>Acute Toxicity</u>		
1. Acute Oral	Albino Rat	LD50 >25 g/kg
2. Acute Dermal	Albino Rabbit	LD50 >8 g/kg
3. Acute Inhalation	Rat	LC50 >2.25 mg/liter
B. <u>Eye Irritation</u>	Albino Rabbit	No effect as an ocular irritant was observed.
C. <u>Skin Sensitization</u>	Guinea Pig	The material is not considered a sensitizer.
D. <u>Subchronic Toxicity</u>		
1. Oral 90-Day	Albino Rat	The test compound was administered in the diet at 1%, 3% and 10% levels. There were no study related mortalities or untoward behavioral reactions. Growth and food intake were normal. No treatment related differences between test and control animals were observed in clinical blood chemistry, hematology, urinalysis, gross pathology and histopathology at all feed levels. Slightly increased liver weight was observed at the 10% dietary level but not at the lower levels.
2. Dermal 28-Day Exposure	Albino Rabbit	At levels of 500 and 2000 mg/kg there was practically no irritation with repeated exposure. There were no significant adverse effects noted in the following areas: Body weight, hematology, blood chemistry, urinalysis, and pathology. Statistically significant lower weight of gonads was observed in females of both test groups and lower liver weight in females at the 2000 mg/kg level. The differences were within the general range for young rabbits of this strain and age.

DO 086407
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Occidental Chemical Corporation

HOOKER Industrial & Specialty Chemicals

Hooker Chemical Center, 360 Rainbow Boulevard South,
Box 728, Niagara Falls, New York 14302 716/286-3000

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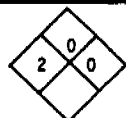
<u>Study</u>	<u>Test Specie</u>	<u>Result</u>
3. Dust Inhalation 28-Day Exposure	Albino Rat	Exposure levels were 640 and 1524 mg/cubic meter. The following parameters were normal: Body weight, blood chemistry, clinical chemistry and urinalysis, and gross pathological examination. Absolute liver and lung weights and lung to body weight ratios were higher than normal in all or some of the test groups. Some histopathological alterations of the lung tissues were observed. These types of changes are frequently observed with exposure to organochlorine compounds and are normally reversible when exposure is terminated.
E. <u>Biodegradation</u>	Sewage Sludge	Dechlorane® Plus is degraded under aerobic conditions but not under anaerobic conditions.
F. <u>Aquatic Toxicity</u>	Bluegill Sunfish	No deaths were observed in 96-hour static and flow through tests at applied concentrations of up to 100 ppm.
G. <u>Mutagenicity</u>		Dechlorane® Plus did not show a mutagenic response in the following tests: Standard Ames Assay (with and without activation), Ames Assay on Urine from rats treated with Dechlorane® Plus, and Mouse Lymphoma Forward Mutation Assay (with and without activation).

The information presented herein contains accurate summaries of toxicological studies performed by others under contract to Hooker. While we have no reason to believe that such studies, and the results thereof were not reported accurately to us, and while we do believe such studies and reports to have been accurate, Hooker cannot and does not guarantee or make any representation or warranty with respect to the accuracy of the information.



MATERIAL SAFETY DATA SHEET

I. PRODUCT INFORMATION

Product Name: DECHLORANE [®] PLUS		 NFPA Hazard Rating
Chemical Name: 1,2,3,4,7,8,9,10,13,13,14,14-dodecachloro-1,4,4a,5,6,6a,7,10,10a,11,12,12a dodecahydro-1,4:7,10-dimethanodibenzo (a,e)cyclooctene		
Chemical Formula: C ₁₈ H ₁₂ Cl ₁₂		Common Name: Dechlorane Plus
Use: Additive for polymeric systems to impart flame-retardant characteristics		Chemical Family: Chlorinated Alicyclic Hydrocarbon
DOT Hazard Classification: Non-Regulated		EPA Registration No.: N/A

II. INGREDIENTS

Ingredients	CAS NO.	%	TLV*	
			TWA	STEL
Dechlorane [®] Plus LD ₅₀ rat (oral) > 25g/kg LD ₅₀ rabbit (skin) > 8 g/kg LC ₅₀ rat (inhalation, 4-hour) > 2.25 mg/l	13560-89-9	99.84		
Volatile Content Hexachlorocyclopentadiene (C-56)	77-47-4	0.15 0.01	0.01 ppm	0.03 ppm

*American Conference of Governmental Industrial Hygienists, 1980

III. TYPICAL PHYSICAL PROPERTIES

Boiling Point, 760mm Hg	N/A	Specific Gravity (H ₂ O = 1)	1.8 - 2.0
Vapor Pressure mm Hg 20 C	0.006 @ 197°C/387°F	Bulk Density	0.3
Vapor Density (air = 1)	N/A	Percent Volatile	0.15
Solubility in Water	Insoluble	Evaporation Rate (= 1)	N/A
Appearance and Odor	White, free flowing, odorless powder	Other - Melting Point 350°C/662°F (with decomposition) Molecular Weight 654	

IV. FIRE AND EXPLOSION HAZARD DATA

Flash Point	None	Upper	N/A	Auto ignition	N/A	Capable of	
Test Method	Flammable limits in air, % volume	Lower	N/A	Temperature		Spontaneous Heating	N/A
Extinguishing Media	As appropriate for surrounding fire.						
Special Fire Fighting Procedures & Personnel Protection	Use self-contained breathing apparatus and full protective equipment.						
Unusual Fire and Explosion Hazards	Decomposition by burning in open flame may yield various toxic chlorine compounds including toxic chlorocarbons and hydrogen chloride.						

V. EMERGENCY PHONE NUMBER AVAILABLE 24 HRS./DAY

1 - 716 - 278 - 7021

The information presented herein, while not guaranteed, is to the best of our knowledge and accurate. No warranty or guarantee express or implied is made regarding the performance or stability of any product, since the manner of use and conditions of

storage and handling are beyond our control. No suggestions for product use, nor anything contained herein, shall be construed as a recommendation for use in infringement of any existing patent.

INDUSTRIAL CHEMICALS GROUP, HOOKER CHEMICALS & PLASTICS CORP.
Niagara Falls, New York 14302

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PRODUCT NAME

DECHLORANE®PLUS

VI REACTIVITY

Incompatibility	Prolonged heating in excess of 275°C (525°F) accelerates thermal degradation.
Hazardous Decomposition Products	At temperatures in excess of 275°C (525°F) degradation products include hydrogen chloride and hexachlorocyclopentadiene.
Conditions to Avoid	Avoid elevated temperatures, in excess of 275°C (525°F).

VII HEALTH RELATED DATA

Effects of over exposure (Route)	Dust causes irritation to mucous membranes.
Acute Chronic	No effect as ocular or lung irritant and skin sensitizer has been observed.
First Aid Procedures	Skin: wash with soap and water; Eyes: flush with a directed stream of water.
Special Medical Procedures Antidote/Skin Care	
Other	Although Dechlorane®Plus additive is not considered hazardous, basic handling precautions are recommended.

VIII SPECIAL PROTECTION INFORMATION

Ventilation	General room ventilation.
Respiratory (type)	Approved dust mask where appropriate.
Gloves (type)	Cotton
Eye Protection (type)	Chemical safety goggles
Other	

IX HANDLING AND STORAGE

Handling and Storage Precautions	Store in a dry place.
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X SPILL OR LEAK PROCEDURE

Reportable Quantity (Section 311 of the Clean Water Act)	
Steps taken in event of spill or release	Shovel into drums for reclaim or transfer to disposal.

XI WASTE DISPOSAL

Method	Incinerate in equipment designed to scrub hydrogen chloride as a product of combustion. Do not flush to sewer.
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XII REMARKS AND REFERENCES

Remarks	
References:	Hooker Chemicals & Plastics Corp. Product Data Sheets No. 344, 345 and 346.

DO 086410
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