Safety Data Sheet
Parylene C Dimer

1 Identification

GHS Product Identifier

Parylene C Dimer
XY-C

Other means of identification

XY-C
Di-chloro-di-p-Xylylene
Dichloro-[2,2]-paracyclophane
Dichlorotricyclo[8.2.2.24,7]hexadeca-1(12),4,6,10,13,15-hexaene, mixed isomers
Chloro-p-xylylene cyclic dimer; Dichlorodi-1,4-xylylene;
Dichlorotricyclo(8.2.2.2(sup 4,7))hexadeca-4,6,10,12,13,15-hexaene

Recommended use of the chemical and restriction on use

Parylene Dimer
Parylene Coating Intermediate

Supplier's details

VSI Parylene
325 Interlocken Parkway
Building C
Broomfield CO 80021

Phone number: (866)767-5633
email: info@vsiparylene.com
www.vsiparylene.com

Emergency phone number

Company name: ChemTel
Phone number: 1-800-255-3924
(24 hours per day, 7 days per week)
Contract Number: MIS4449074

2 Hazard(s) identification

Classification of the substance or mixture

Classification of the substance in accordance with Hazard Communication standard (HCS) (29 CFR 1910.1200(g))

GHS label elements

Warning

May cause an allergic skin reaction

Causes serious eye irritation

May cause respiratory irritation

Do not breathe dust/fume/gas/mist/vapors/spray.

Wash hands thoroughly after handling.

Wear protective gloves/protective clothing/eye protection/face protection.

IF ON SKIN: Wash with plenty of soap and water.

If skin irritation or rash occurs: Get medical advice/attention.

Wash contaminated clothing before reuse.

Dispose of contents/container to accordance with local regulations.

Other hazards which do not result in classification

Toxic fumes may be released during fire. Direct eye contact may cause temporary redness. Inhalation of dusts may cause respiratory irritation. ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

3 Composition/information on ingredients

Description	CAS Number	EINECS Number	%	Note
Chemical Name: Dichloro-di-p-XylyleneDichloro-Tricyclo(8.2.2.24,7)-hexadeca-1(12)4,6,10,12,13,15-hexaeneSkin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	28804-46-8	249-236-8	99 - 99.999	
Monochloro-di-p-Xylylene	56486-91-0		0.1 - 4	
Trichloro-di-p-Xylylene	29716-49-2		0.1 - 5	

4 First-aid measures

Description of necessary first-aid measures

Eye Contact	Wash thoroughly with water or saline. Keep eyelids open during flushing. If symptoms persist, call a physician or seek medical attention.
Skin Contact	Wash off immediately with soap and plenty of water while removing all contaminated clothing. Consult a physician if necessary.
Inhalation	Move to fresh air, keep at rest in a comfortable position. Avoid breathing dust that might arise from handling the product. Consult a physician if needed.
Ingestion	Rinse mouth out with water. Drink plenty of water. If symptoms persist, call a physician or get medical aid. Do not induce vomiting.

Most important symptoms/effects, acute and delayed

Acute:

- Ingestion: Heartburn and abdominal pain may occur.
- Inhalation: Irritation of the mucous membranes of the upper airway, and coughing may occur.
- Skin Contact: Redness of the skin may occur.
- Eye Contact: A burning sensation and redness of the conjunctiva may occur.

Delayed:

- There are no expected delayed symptoms or effects attributable to this substance.

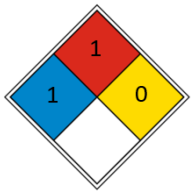
Indication of immediate medical attention and special treatment needed, if necessary

Treat symptomatically and supportively.

5 Fire-fighting measures

Suitable extinguishing media

NFPA Rating



Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Extinguishing Media: Water spray, dry chemical, carbon dioxide, chemical foam.

There are no known unsuitable means for extinguishing.

Specific hazards arising from the chemical

Burning may result in the liberation of toxic fumes may produce Carbon Monoxide, Carbon Dioxide and HCl.

There are no known special hazards on this substance.

Special protective actions for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Use appropriate personal protective equipment as indicated in section 8. Avoid contact with the skin and the eyes. Use personal protective equipment. For personal protection see section 8. Ensure adequate ventilation. If adequate ventilation is not possible, NIOSH/MSHA approved respiratory protection should be worn.

Environmental precautions

Prevent entry into waterways, sewers, or groundwater.

Methods and materials for containment and cleaning up

Contamination procedures	Collect all the material spilled on the ground with appropriate protective equipment and put it in a clean container.
Cleaning up procedures	Gently sweep or suction up material and place into a suitable, properly labeled container. If necessary, spill may be wetted with a light spray of water to dampen the material to prevent dust generation. Avoid dust formation. A suitable vacuum fitted with an appropriate filter system may be utilized for small quantities provided the vacuum system is equipped to prevent generation of finely dispersed dust and the buildup of static charge which could lead to static discharge.

7 Handling and storage

Precautions for safe handling

Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Remove and wash contaminated clothing before re-use. Do not breathe dust, fume, gas, or vapors. Do not eat, drink or smoke when using this product. Wash face, hands and any exposed skin after handling.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a cool, dry and well-ventilated place out of sunlight. Recommended storage <30 degrees C.

8 Exposure controls/personal protection

Control parameters

Occupational Exposure Limits	Not established
Biological Limits (BEI)	Not established
OSHA ACGIH TLV	Not established
TLV-TWA PNOC inhalable	10 mg/m^3

Appropriate engineering controls

Eyewash Stations
Process enclosure and/or ventilation systems. Apply technical measures to comply with the occupational exposure limits.

Individual protection measures

Eye and Face Protection: Safety glasses according to OSHA 29 CFR 1910.133.
Skin protection: Chemical resistant gloves according to ISHA 29 CFR 1910.133, nitrile rubber, not less than 0.12mm. Apron, protective clothing shoes and clothing suitable to prevent skin contact.
Respiratory protection: If exposure limits are exceeded, expected to be exceeded, or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.
Hygiene: Remove and wash contaminated clothing before re-use. Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended. Handle in accordance with good industrial hygiene and safety practice.

9 Physical and chemical properties

Physical and chemical properties

Physical State	Powder/Granules
Appearance	White/off white
Odor	Odorless
pH	6.89 -6.92
Melting point	166°C - 175°C
Boiling point/boiling range	>430°C
Flash Point	No information available
Flammability (solid, gas)	No Information available
Upper/lower flammability or explosive limits	No Information available
Vapor pressure	0.002 Pa
Vapor density	1.34 g/cm^3
Relative density	0.671 at 20°C
Solubility	Insoluble
Partition coefficient: n-octanol/water	3.98 at 20°C
Autoignition Temperature	No self-ignition up to the melting point
Decomposition temperature	No Information available
Viscosity	No Information available
Explosive Properties	Not applicable
Oxidizing properties	Not applicable
VOC Content (%)	0.00%

10 Stability and reactivity

Reactivity

This product is not considered reactive under normal conditions of use and storage.

Chemical stability

This product is stable under recommended storage, use, and handling conditions.

Possibility of hazardous reactions

None under normal storage, use and handling conditions

Conditions to avoid

Avoid exposure to UV light and excessive heat.

Incompatible materials

Strong oxidizing agents, strong acids, strong bases.

Hazardous decomposition products

Thermal decomposition or burning may result in emission of toxic fumes under certain conditions. Carbon Monoxide, Carbon Dioxide, and Hydrogen Chloride may be emitted as byproducts of fire.

11 Toxicological information

Information on the likely routes of exposure

Inhalation	May be irritating to the lungs. Avoid breathing dust, fume, gas, vapors.
Eye Contact	Irritating to eyes.
Skin Contact	Irritating to skin.
Ingestion	Not an expected route of exposure. Do NOT taste or swallow.

Symptoms related to the physical, chemical and toxicological characteristics

Skin Corrosion/Irritation	Irritating to skin. May cause redness or contact dermatitis of the affected area.
Eye damage/Irritation	Irritating to eyes. Risk of serious damage to eyes.
Irritation	Irritating to eyes. Irritating to skin. May be irritating to the lungs.
Sensitization	No evidence available to suggest sensitization will occur.
Germ cell mutagenicity	Not a suspected mutagen. Insufficient information available, limited data suggests a negative result.
Carcinogenicity	Not a suspected carcinogen. Insufficient information available, limited data suggests a negative result.
Reproductive Toxicity	Not a suspected reproductive toxin. Insufficient information available, limited data suggests a negative result.
Specific target organ systemic toxicity (single exposure)	May be harmful to the lungs. Suspected STOT Category 3. Insufficient information available.
Specific target organ systemic toxicity (repeated exposure)	
Aspiration Hazard	No information available.

Delayed and immediate effects and chronic effects from short and long-term exposure

Inhalation	Irritation of the mucosa of the upper airway
Ingestion	Heartburn and abdominal pain
Skin contact	Redness of the skin
Eye Contact	Burning sensation and redness of the conjunctiva

Numerical measures of toxicity (such as acute toxicity estimates)

The following values are calculated based on the applicable standards of the GHS document.
ATEmix (oral): 6500 mg/kg
ATEmix (dermal): 16000 mg/kg
ATEmix (inhalation-dust): 10.0 mg/l

12 Ecological information

Toxicity

100% of the mixture consists of components(s) of unknown hazards to the aquatic environment. Limited data suggests the product is low risk.

Persistence and degradability

Hydrolytically stable in acid, neutral and alkaline conditions. Not readily biodegradable.

Bioaccumulative potential

100% of the mixture consists of components(s) of unknown hazards. Limited data suggests the product is not a risk for bioaccumulation.

Mobility in soil

The calculated log Koc of parylene C dimer was 4.85, which indicated that the substance is hardly mobile in soil.

Other adverse effects

No information available.

13 Disposal considerations

Disposal methods

Material should be handled in compliance with safety and personal protective equipment listed under items 7 and 8. Dispose of in accordance with local, state, and federal regulations. This material, as supplied, is not a hazardous waste according to state and federal regulations (40 CFR 261).

14 Transport information

UN Number

None

UN Proper Shipping Name

Not regulated

Transport hazard class(es)

Not regulated

Packing group, if applicable

Not regulated

Environmental hazards

None

Special precautions for user

Not regulated

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not regulated

15 Regulatory information

Safety, health and environmental regulations specific for the product in question

US Federal Information

Tricyclo[8.2.2.24,7]hexadec -1(12).4.6.10.13.15 -hexaene, dichloro, CAS #28804-46-8 are present on the following US Federal chemical lists:

TSCA Inventory	All Ingredients listed
EINECS/ELINCS	All Ingredients listed
DSL	Some Ingredients listed
NDSL	Some Ingredients listed
PICCS	Some Ingredients listed
ENCS	All Ingredients listed
IECSC	Some Ingredients listed
AICS	Some Ingredients listed
KECL	All Ingredients listed
NZIoC	Some Ingredients listed
CERCLA	None applicable
SARA	None applicable

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic health hazard	No
Fire hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act This product does not contain any substances regulated as pollutants pursuant to the Clean Water CFR 122.21 and 40 CFR 122.42).

US State Information

California Proposition 65 This product does not contain any Proposition 65 chemicals
U.S. State Right-to-Know Regulations This product does not contain any substances regulated by state right-to-know regulations

European Community Information

EC LABELING AND CLASSIFICATION: This product does not meet the definition of a hazardous material, as defined by the European Community Council Directive 67/548/EEC.
EC CLASSIFICATION: Not applicable.
EC RISK PHRASES: Not applicable.
EC SAFETY PHRASES: Not applicable.
EUROPEAN COMMUNITY ANNEX II HAZARD SYMBOLS: Not applicable.
EC INFORMATION FOR COMPONENTS:
Di-chloro-di-p-Xylylene:
EINECS NUMBER: 249-236-8
EC CLASSIFICATION: An official classification for these substances has not been published in Commission Directives 93/72/EEC or 94/69EC.

Regulatory information (continued)

Monochloro-di-p-Xylylene:
EINECS NUMBER: Unlisted.
EC CLASSIFICATION: An official classification for these substances has not been published in Commission Directives 93/72/EEC or 94/69EC.
Trichloro-di-p-Xylylene:
EINECS NUMBER: Unlisted.
EC CLASSIFICATION: An official classification for these substances has not been published in Commission Directives 93/72/EEC or 94/69EC.
DANISH INFORMATION FOR PRODUCT:
NEUROTOXIC SUBSTANCES IN THE WORKING ENVIRONMENT: No component of this product is listed as a Neurotoxic Substance in the Working Environment in Denmark.
DUTCH INFORMATION FOR THE PRODUCT:
LIST OF PRIORITY SUBSTANCES: No component of this product is listed as substance hazardous in the environment under VROM 93292/7-93, by the Hague, Ministry of Housing and Physical Planning and the Environment.
GERMAN INFORMATION FOR THE PRODUCT:
AQUATIC HAZARD CLASS (WGK):
Chemical/ WGK Rating
Di-chloro-di-p-Xylylene/ 1 (self-rated)
Monochloro-di-p-Xylylene/ 1 (self-rated)
Trichloro-di-p-Xylylene/1 (self-rated)
TECHNICAL INSTRUCTION ON AIR QUALITY CONTROL (TALuft): None of the components of this product have specific TALuft Classifications.
NORWEGIAN INFORMATION FOR PRODUCT:
ENVIRONMENTAL POLLUTANTS: No component of this product is listed as Environmental Pollutants by the State Pollution Control Authority in Norway.
SWEDISH INFORMATION FOR THE PRODUCT:
SWEDISH NATIONAL CHEMICALS INSPECTORATE'S LIST OF CARCINOGENIC SUBSTANCES: The components of this product are not on the National Chemicals Inspectorate's List Of Carcinogenic Substances.
SWEDISH NATIONAL CHEMICALS INSPECTORATE'S ESTHER MANUAL: The components of this product are not ESTHER Substances.
SWEDISH HIGH VOLUME CHEMICALS: No component of this product is on the list of Swedish High Volume Chemicals. This is the list of 1000 compounds that are of the highest volume produced or imported into Sweden.
OTHER SWEDISH REGULATIONS: No component of this product is on the Swedish list of Environmentally Hazardous Chemicals.

Acronyms

AICS - Australian Inventory of Chemical Substances
APCISS - Asia - Pacific Chemical Inventory Search System
CERCLA - Comprehensive Environmental Response Compensation and Liability Act (40 CFR 302)
DSL/NDSL - Canadian Domestic Substances List/Non - Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
NZIoC - New Zealand Inventory of Chemicals
PICCS - Philippines Inventory of Chemicals and Chemical Substances
SARA - Superfund Amendments and Reauthorization Act (40 CFR 355)
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

16 Other information

To the best of our knowledge, the information contained herein is accurate. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process.
Neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.