

SAFETY DATA SHEET



Date of issue/Date of revision 8 March 2024

Version 2

Section 1. Identification

Product name : RAVEN 410 HCR - PART A
Product code : 00467666
Other means of identification : Not available.
Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Product use : Industrial applications, Professional applications, Used by spraying.
Use of the substance/mixture : Coating.
Uses advised against : Not applicable.

Manufacturer : PPG Industries, Inc.
One PPG Place
Pittsburgh, PA 15272

Emergency telephone number : (412) 434-4515 (U.S.)
(514) 645-1320 (Canada)
SETIQ Interior de la República: 800-00-214-00 (México)
SETIQ Ciudad de México: (55) 5559-1588 (México)

Technical Phone Number : 888-977-4762

Section 2. Hazards identification


OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : SKIN IRRITATION - Category 2
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 1A
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity: 19.1% (oral), 84.6% (dermal), 88.9% (inhalation)

This product contains TiO₂ which has been classified as a GHS Carcinogen Category 2 based on its IARC 2B classification. For many products, TiO₂ is utilized as a raw material in a liquid coating formulation. In this case, the TiO₂ particles are bound in a matrix with no meaningful potential for human exposure to unbound particles of TiO₂ when the product is applied with a brush or roller. Sanding the coating surface or mist from spray applications may be harmful depending on the duration and level of exposure and require the use of appropriate personal protective equipment and/or engineering controls (see Section 8).

GHS label elements

Section 2. Hazards identification

Hazard pictograms	:	
Signal word	:	Danger
Hazard statements	:	Causes skin irritation. May cause an allergic skin reaction. May cause cancer. Causes damage to organs through prolonged or repeated exposure.
Precautionary statements		
Prevention	:	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.
Response	:	IF exposed or concerned: Get medical advice or attention. Take off contaminated clothing and wash it before reuse. Wash contaminated clothing before reuse. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention.
Storage	:	Store locked up.
Disposal	:	Dispose of contents and container in accordance with all local, regional, national and international regulations.
Supplemental label elements	:	Sanding and grinding dusts may be harmful if inhaled. This product contains crystalline silica which can cause lung cancer or silicosis. The risk of cancer depends on the duration and level of exposure to dust from sanding surfaces or mist from spray applications. Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. This product either contains formaldehyde or is capable of releasing formaldehyde above 0.5 ppm under certain conditions. Formaldehyde is a known cancer hazard, a skin sensitizer and a respiratory sensitizer. Emits toxic fumes when heated.
Hazards not otherwise classified	:	None known.

Section 3. Composition/information on ingredients

Substance/mixture	:	Mixture
Product name	:	RAVEN 410 HCR - PART A

Section 3. Composition/information on ingredients

Ingredient name	%	CAS number
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	≥50 - ≤75	9003-36-5
crystalline silica, respirable powder (<10 microns)	≥10 - ≤20	14808-60-7
titanium dioxide	≥5.0 - ≤10	13463-67-7
1,3-bis(2,3-epoxypropoxy)-2,2-dimethylpropane	≥1.0 - ≤5.0	17557-23-2
2-Propenenitrile, polymer with 1,3-butadiene, carboxy-terminated, polymer with 2,2'-[(2,2-dimethyl-1,3-propanediyl)bis(oxymethylene)]bis[oxirane]	≥1.0 - ≤4.1	68909-14-8
9-Octadecenoic acid, 12-(2-oxiranylmethoxy)-, 1,2,3-propanetriyl ester, homopolymer	≥1.0 - ≤4.1	74398-71-3
Epoxy resin (MW ≤ 700)	≤1.7	25068-38-6
surfactant	≥1.0 - ≤5.0	Not available.
maleic anhydride	<0.10	108-31-6

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Description of necessary first aid measures

- Eye contact** : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.
- Inhalation** : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.
- Ingestion** : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes skin irritation. May cause an allergic skin reaction.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : No specific data.

Section 4. First aid measures

- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No specific data.

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

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon oxides
nitrogen oxides
halogenated compounds
metal oxide/oxides
Formaldehyde.

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Section 6. Accidental release measures

- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Special precautions** : Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors. If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : Do not store above the following temperature: 50°C (122°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol crystalline silica, respirable powder (<10 microns)	None. ACGIH TLV (United States, 1/2023). [Silica, crystalline] TWA: 0.025 mg/m ³ 8 hours. Form: Respirable OSHA PEL Z3 (United States, 6/2016). TWA: 10 mg/m ³ / (%SiO ₂ +2) 8 hours. Form: Respirable TWA: 250 mppcf / (%SiO ₂ +5) 8 hours. Form: Respirable OSHA PEL (United States, 5/2018). [Silica, crystalline] TWA: 50 µg/m ³ 8 hours. Form: Respirable dust
titanium dioxide	OSHA PEL (United States, 5/2018). TWA: 15 mg/m ³ 8 hours. Form: Total dust ACGIH TLV (United States, 1/2023). TWA: 2.5 mg/m ³ 8 hours. Form: respirable fraction, finescale particles
1,3-bis(2,3-epoxypropoxy)-2,2-dimethylpropane	None.
2-Propenenitrile, polymer with 1,3-butadiene, carboxy-terminated, polymer with 2,2'-[(2,2-dimethyl-1,3-propanediyl)bis(oxymethylene)]bis [oxirane]	None.
9-Octadecenoic acid, 12-(2-oxiranylmethoxy)-, 1,2,3-propanetriyl ester, homopolymer	None.
Epoxy resin (MW ≤ 700)	None.
surfactant	None.
maleic anhydride	ACGIH TLV (United States, 1/2023). Skin sensitizer. Inhalation sensitizer. TWA: 0.01 mg/m ³ 8 hours. Form: Inhalable fraction and vapor OSHA PEL (United States, 5/2018). TWA: 1 mg/m ³ 8 hours. TWA: 0.25 ppm 8 hours.

Key to abbreviations

A = Acceptable Maximum Peak

ACGIH = American Conference of Governmental Industrial Hygienists.

S = Potential skin absorption

SR = Respiratory sensitization

Section 8. Exposure controls/personal protection

C	= Ceiling Limit	SS	= Skin sensitization
F	= Fume	STEL	= Short term Exposure limit values
IPEL	= Internal Permissible Exposure Limit	TD	= Total dust
OSHA	= Occupational Safety and Health Administration.	TLV	= Threshold Limit Value
R	= Respirable	TWA	= Time Weighted Average
Z	= OSHA 29 CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances		

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Gloves : butyl rubber

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. The respiratory protection shall be in accordance to 29 CFR 1910.134.

Section 9. Physical and chemical properties

Appearance

Physical state	: Liquid.
Color	: Off-white.
Odor	: Faint odor.
Odor threshold	: Not available.
pH	: Not applicable.
Melting point	: Not available.
Boiling point	: >37.78°C (>100°F)
Flash point	: Closed cup: 100°C (212°F)
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Flammability	: Not available.
Lower and upper explosive (flammable) limits	: Not available.
Evaporation rate	: Not available.
Vapor pressure	: Not available.
Vapor density	: Not available.
Relative density	: 1.37
Density (lbs / gal)	: 11.43

Solubility(ies)

Media	Result
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cold water	Not soluble
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Partition coefficient: n-octanol/water : Not applicable.

Viscosity : Kinematic (40°C (104°F)): >21 mm²/s (>21 cSt)

Volatility : 1% (v/v), 0.6% (w/w)

% Solid. (w/w) : 99.4

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : When exposed to high temperatures may produce hazardous decomposition products. Refer to protective measures listed in sections 7 and 8.

Incompatible materials : Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.

Section 10. Stability and reactivity

Hazardous decomposition products : Depending on conditions, decomposition products may include the following materials: carbon oxides nitrogen oxides halogenated compounds Formaldehyde. metal oxide/oxides

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol titanium dioxide	LD50 Oral	Rat	>10000 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat	>6.82 mg/l	4 hours
	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
1,3-bis(2,3-epoxypropoxy)-2,2-dimethylpropane	LD50 Oral	Rat	4500 mg/kg	-
	LD50 Oral	Rat	4500 mg/kg	-
9-Octadecenoic acid, 12-(2-oxiranylmethoxy)-, 1,2,3-propanetriyl ester, homopolymer	LD50 Dermal	Rabbit	>5 g/kg	-
	LD50 Oral	Rat	>5 g/kg	-
Epoxy resin (MW ≤ 700)	LD50 Dermal	Rabbit	>2 g/kg	-
	LD50 Oral	Rat	>2 g/kg	-
maleic anhydride	LD50 Dermal	Rabbit	2620 mg/kg	-
	LD50 Oral	Rat	400 mg/kg	-

Conclusion/Summary : There are no data available on the mixture itself.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Epoxy resin (MW ≤ 700)	Eyes - Mild irritant	Rabbit	-	-	-
	Skin - Mild irritant	Rabbit	-	-	-

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Eyes : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Sensitization

Product/ingredient name	Route of exposure	Species	Result
Epoxy resin (MW ≤ 700)	skin	Mouse	Sensitizing

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Mutagenicity

Conclusion/Summary : There are no data available on the mixture itself.

Section 11. Toxicological information

Carcinogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Classification

Product/ingredient name	OSHA	IARC	NTP
crystalline silica, respirable powder (<10 microns)	+	1	Known to be a human carcinogen.
titanium dioxide	-	2B	-

Carcinogen Classification code:

IARC: 1, 2A, 2B, 3, 4

NTP: Known to be a human carcinogen; Reasonably anticipated to be a human carcinogen

OSHA: +

Not listed/not regulated: -

Reproductive toxicity

Conclusion/Summary : There are no data available on the mixture itself.

Teratogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
2-Propenenitrile, polymer with 1,3-butadiene, carboxy-terminated, polymer with 2,2'-[(2,2-dimethyl-1,3-propanediyl)bis(oxyethylene)]bis[oxirane]	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
crystalline silica, respirable powder (<10 microns)	Category 1	inhalation	-
maleic anhydride	Category 1	inhalation	respiratory system

Target organs

: Contains material which causes damage to the following organs: liver, spleen, bone marrow.

Contains material which may cause damage to the following organs: kidneys, lungs, upper respiratory tract, immune system, skin, eyes.

Aspiration hazard

Not available.

Information on the likely routes of exposure

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Section 11. Toxicological information

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

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

Conclusion/Summary : There are no data available on the mixture itself. This product either contains formaldehyde or is capable of releasing formaldehyde above 0.5 ppm under certain conditions. Formaldehyde is a known cancer hazard, a skin sensitizer and a respiratory sensitizer. This product contains crystalline silica which can cause lung cancer or silicosis. The risk of cancer depends on the duration and level of exposure to dust from sanding surfaces or mist from spray applications. This product contains TiO₂ which has been classified as a GHS Carcinogen Category 2 based on its IARC 2B classification. For many products, TiO₂ is utilized as a raw material in a liquid coating formulation. In this case, the TiO₂ particles are bound in a matrix with no meaningful potential for human exposure to unbound particles of TiO₂ when the product is applied with a brush or roller. Sanding the coating surface or mist from spray applications may be harmful depending on the duration and level of exposure and require the use of appropriate personal protective equipment and/or engineering controls (see Section 8). Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Short term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Long term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Potential chronic health effects

General : Causes damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Section 11. Toxicological information

Reproductive toxicity : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
RAVEN 410 HCR - PART A	68621.6	30017.4	N/A	N/A	N/A
1,3-bis(2,3-epoxypropoxy)-2,2-dimethylpropane	4500	N/A	N/A	N/A	N/A
Epoxy resin (MW ≤ 700)	2500	2500	N/A	N/A	N/A
maleic anhydride	400	2620	N/A	N/A	N/A

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	Acute LC50 2.54 mg/l	Fish	96 hours
titanium dioxide	Acute LC50 >100 mg/l Fresh water	Daphnia - <i>Daphnia magna</i>	48 hours
Epoxy resin (MW ≤ 700)	Acute LC50 1.8 mg/l	Daphnia	48 hours
	Chronic NOEC 0.3 mg/l	Daphnia	21 days

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Epoxy resin (MW ≤ 700)	OECD 301F	5 % - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Epoxy resin (MW ≤ 700)	-	-	Not readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	2.7	-	Low
Epoxy resin (MW ≤ 700)	3	31	Low
maleic anhydride	-2.78	-	Low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Section 12. Ecological information

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14. Transport information

	DOT	IMDG	IATA
UN number	Not regulated.	UN3082	UN3082
UN proper shipping name	-	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Epoxy Resin, Epoxy resin (MW ≤ 700))	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Epoxy Resin, Epoxy resin (MW ≤ 700))
Transport hazard class(es)	-	9	9
Packing group	-	III	III
Environmental hazards	No.	Yes.	Yes.
Marine pollutant substances	Not applicable.	☑Epoxy Resin)	Not applicable.

Additional information

DOT : None identified.

IMDG : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.

IATA : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14. Transport information

Transport in bulk according to IMO instruments : Not applicable.

Section 15. Regulatory information

United States

United States inventory (TSCA 8b) : All components are active or exempted.

SARA 302/304

SARA 304 RQ : Not applicable.

Composition/information on ingredients

No products were found.

SARA 311/312

Classification : SKIN IRRITATION - Category 2
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 1A
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1

Composition/information on ingredients

Name	%	Classification
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol crystalline silica, respirable powder (<10 microns)	≥50 - ≤75	SKIN IRRITATION - Category 2 SKIN SENSITIZATION - Category 1B
titanium dioxide	≥10 - ≤20	CARCINOGENICITY - Category 1A SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
1,3-bis(2,3-epoxypropoxy)-2,2-dimethylpropane	≥5.0 - ≤10	CARCINOGENICITY - Category 2
2-Propenenitrile, polymer with 1,3-butadiene, carboxy-terminated, polymer with 2,2'-(2,2-dimethyl-1,3-propanediyl)bis(oxyethylene)]bis[oxirane]	≥1.0 - ≤5.0	SKIN IRRITATION - Category 2 SKIN SENSITIZATION - Category 1B
9-Octadecenoic acid, 12-(2-oxiranylmethoxy)-, 1,2,3-propanetriyl ester, homopolymer	≥1.0 - ≤4.1	COMBUSTIBLE DUSTS SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2B SKIN SENSITIZATION - Category 1B SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
Epoxy resin (MW ≤ 700)	≥1.0 - ≤4.1	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1B
surfactant	≤1.7	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1B
maleic anhydride	≥1.0 - ≤5.0 <0.10	SKIN IRRITATION - Category 2 COMBUSTIBLE DUSTS ACUTE TOXICITY (oral) - Category 4 SKIN CORROSION - Category 1B SERIOUS EYE DAMAGE - Category 1 RESPIRATORY SENSITIZATION - Category 1A SKIN SENSITIZATION - Category 1A SPECIFIC TARGET ORGAN TOXICITY (REPEATED

Product code 00467666

Date of issue 8 March 2024

Version 2

Product name RAVEN 410 HCR - PART A

Section 15. Regulatory information

EXPOSURE) - Category 1

Additional environmental information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.

[California Prop. 65](#)

 **WARNING:** Cancer - www.P65Warnings.ca.gov.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health : 2 * Flammability : 1 Physical hazards : 0

(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on MSDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

Health : 2 Flammability : 1 Instability : 0

Date of previous issue : 9/21/2022

Organization that prepared the SDS : EHS

Key to abbreviations

: ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
UN = United Nations

 Indicates information that has changed from previously issued version.

[Disclaimer](#)

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.