SAFETY DATA SHEET

The information in this Safety Data Sheet is required pursuant to Hazardous Product Regulations 2023.

Date of issue/Date of revision 13 February 2025
Version 5

Section 1. Identification

Product name : RAVEN 405 BLUE UNLINED - B
Product code : 00465059
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.

Supplier : PPG Architectural Coatings Canada, Inc.
1550, rue Ampère, bureau 500
Boucherville (Québec) J4B 7L4
Canada
+1 450-655-3121

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. Hazard identification

Classification of the substance or mixture : ACUTE TOXICITY (oral) - Category 4
ACUTE TOXICITY (inhalation) - Category 2
SKIN CORROSION - Category 1
SERIOUS EYE DAMAGE - Category 1
SKIN SENSITIZATION - Category 1A
GERM CELL MUTAGENICITY - Category 2
TOXIC TO REPRODUCTION - Category 1B
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
Health Hazards Not Otherwise Classified - Category 1

GHS label elements

Section 2. Hazard identification

Hazard pictograms :

Signal word : Danger

Hazard statements : Harmful if swallowed.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
Fatal if inhaled.
Suspected of causing genetic defects.
May damage fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure. (kidneys)
Causes digestive tract burns.

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. In case of inadequate ventilation wear respiratory protection. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

Response : IF exposed or concerned: Get medical advice or attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. If skin irritation or rash occurs: Get medical advice or attention. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Storage : Store locked up.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : Do not taste or swallow. 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. Wash thoroughly after handling. Emits toxic fumes when heated.
Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity: 9.6% (oral), 20.8% (dermal), 65.8% (inhalation)

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Product name : RAVEN 405 BLUE UNLINED - B

Other means of identification : Not available.

CAS number/other identifiers

Section 3. Composition/information on ingredients

Ingredient name	Synonyms	% (w/w)	CAS number
m-phenylenebis(methylamine)	1,3-Benzenedimethanamine; m-Xylylendiamine; m-Xylene-alpha,alpha-diamine; m-Xylene alpha, alpha'- diamine; m-Xylene α,α'-diamine; m-xylene-α, α'-diamine; m-Xylylenediamine; 1,3-bis (Aminomethyl)benzene; MXDA; m-Xylene α,α'-diamine; m-Xylene-a, a'diamine	10 - 30*	1477-55-0
4-nonylphenol, branched	Phenol, 4-nonyl-, branched; Branched 4-nonylphenol (mixed isomers); Nonylphenol, 4-branched; N-NONYLPHENOL; Nonylphenol; C9-Branched alkyl phenol; Branched p-nonylphenol; 4-Nonylphenol; Monoalkyl (C3-9)phenol; C9 branched alkyl phenol; Branched 4-nonylphenol	10 - 30*	84852-15-3
Poly[oxy(methyl-1,2-ethanediyl)], α-(2-aminomethylethyl)-ω-(2-aminomethylethoxy)-	Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-; Poly[oxy(methyl-1,2-ethanediyl)], alpha-(2-aminomethylethyl)- omega -(2-aminomethylethoxy)-; .alpha.,.omega.-Diaminopolypropylene glycol; Jeffamine 400; Jeffamine D 600; polyoxypropylenediamine; Diaminopolypropylene glycol; Poly(oxy (methyl-1,2-ethanediyl)), alpha-(2-aminomethylethyl)-omega-(2-aminomethylethoxy)-; poly (oxypropylene)diamine; Poly(oxy(methyl-1,2-ethanediyl)), .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-; JEFFAMINE D-2000	7 - 13*	9046-10-0 (n = 2-6)
1,3-Benzenedimethanamine, polymer with 2,2'-[(1-methylethylidene)bis (4,1-phenyleneoxymethylene)]bis [oxirane]	(1,3-Phenylene)dimethanamine--2,2'-[propane-2,2-diylbis[(4,1-phenylene)oxymethylene]]bis(oxirane) (1/1); 1,3-Benzenedimethanamine, polymer with 2,2'-[(1-methyl-ethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane]; Polymer[1,3-benzenedimethanamine 1,1'-[isoprop 1,3-Benzenedimethanamine polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane); Reaction products of m-phenylenebis(methylamine) with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane	5 - 10*	110839-13-9
2,2'-iminodiethylamine	diethylenetriamine; 2,2'-iminodi (ethylamine); 1,2-Ethanediamine, N1-(2-aminoethyl)-; DETA; 1,2-Ethanediamine, N-(2-aminoethyl)-; N-(2-Aminoethyl)-1,2-ethanediamine; 2,2'-Diaminodiethylamine; bis(2-Aminoethyl) amine; 1,4,7-Tri-(aza)-heptane; di	3 - 7*	111-40-0

Section 3. Composition/information on ingredients

	(2-aminoethyl)amine; 1,5-DIAMINO-3-AZAPENTANE		
3-aminomethyl-3,5,5-trimethylcyclohexylamine	Cyclohexanemethanamine, 5-amino-1,3,3-trimethyl-; Isophorone diamine; 3-(Aminomethyl)-3,5,5-trimethylcyclohexan-1-amine; 5-Amino-1,3,3-trimethylcyclohexanemethanamine; 1-amino-3-aminomethyl-3,5,5-trimethylcyclohexane; 1,3,3-trimethyl-1-aminomethyl-5-aminocyclohexane; 1-amino-3-aminomethyl-3,3,5-trimethylcyclohexane; 5-amino-1,3,3-trimethylcyclohexanemethylamine; Aminomethyl-5 trimethyl-3,5,5 cyclohexylamine; 3-Aminomethyl-3,5,5-trimethyl cyclohexylamine (Isophoronediamine) and preparations containing it; 3-(aminomethyl) -3,5,5-trimethylcyclohexylamine	3 - 7*	2855-13-2
4,4'-methylenebis(cyclohexylamine)	Cyclohexanamine, 4,4'-methylenebis-; Bis(4-aminocyclohexyl)methane; Cyclohexylamine, 4,4'-methylenebis-; 4,4'-Diaminodicyclohexylmethane; 4,4'-Methylenedi(cyclohexan-1-amine); 4,4'-Methylenebis(cyclohexan-1-amine); Diaminodicyclohexylmethane; 4,4'-Methylenebiscyclohexylamine; BIS (CYCLOHEXYLAMINE), 4,4'-METHYLENE-; Methylenebiscyclohexanamine, 4,4'-; 4,4 diaminodicyclohexylmethane	1 - 5*	1761-71-3
Formaldehyde, polymer with benzenamine, hydrogenated	poly(methylenecyclohexanamine); High-boiling fraction of hydrogenation products of (reaction products of aniline and formaldehyde); Hydrogenated polymer of aniline / formaldehyde; Copolymer of benzenamine and formaldehyde, hydrogenated; Methyleneoxide, polymer with benzenamine, hydrogenated	1 - 5*	135108-88-2
bisphenol A	4,4'-isopropylidenediphenol; 4,4'-isopropylidenedi-phenol; Phenol, 4,4'-(1-methylethylidene)bis-; 2,2-Bis (4-hydroxyphenyl)propane; 4,4'-(1-Methylethylidene)bis[phenol; diphenylolpropane; BPA; Phenol, 4,4'-isopropylidenedi-; 4,4’-(propane-2,2-diyl) diphenol; 4,4’-isopropylidenediphenol; BPA; 4,4'-(1-Methylethylidene)bisphenol	1 - 5*	80-05-7
phenol	carbolic acid; monohydroxybenzene; phenylalcohol; Phenol, molten; Phenyl hydroxide; Hydroxybenzene; phenol, pure;	0.5 - 1.5*	108-95-2

Section 3. Composition/information on ingredients

	phenol, crude; Oxybenzene; Phenic acid; Phenols		

Ranges if listed above for hazardous ingredient(s) are prescribed ranges. The actual concentration(s) or actual concentration range(s) are being withheld as a trade secret.

SUB codes represent substances without registered CAS Numbers.

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 : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.

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 : Causes serious eye damage.

Inhalation : Fatal if inhaled.

Skin contact : Causes severe burns. May cause an allergic skin reaction.

Ingestion : Harmful if swallowed. Corrosive to the digestive tract. Causes burns.

Over-exposure signs/symptoms

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

Inhalation : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
reduced fetal weight
increase in fetal deaths
skeletal malformations

Section 4. First-aid measures

Ingestion : Adverse symptoms may include the following:
stomach pains
reduced fetal weight
increase in fetal deaths
skeletal malformations

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.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon oxides
nitrogen 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. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

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".

Section 6. Accidental release measures

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. Avoid exposure during pregnancy. 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. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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 : Wash hands thoroughly after handling.

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.

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
m-phenylenebis(methylamine)	**CA Alberta Provincial (Canada, 3/2023)** Absorbed through skin. C: 0.1 mg/m³. **CA British Columbia Provincial (Canada, 4/2024)** Absorbed through skin. C: 0.1 mg/m³. **CA Ontario Provincial (Canada, 6/2019)** Absorbed through skin. Ceiling Limit: 0.1 mg/m³. **CA Quebec Provincial (Canada, 2/2024)** Absorbed through skin. C: 0.1 mg/m³. **CA Saskatchewan Provincial (Canada, 4/2021)** Absorbed through skin. CEIL: 0.1 mg/m³.
4-nonylphenol, branched	None.
Poly[oxy(methyl-1,2-ethanediyl)], α-(2-aminomethylethyl)-ω-(2-aminomethylethoxy)-	None.
1,3-Benzenedimethanamine, polymer with 2,2'-[(1-methylethylidene) bis(4,1-phenyleneoxymethylene)]bis[oxirane]	None.
2,2'-iminodiethylamine	**CA Alberta Provincial (Canada, 3/2023)** Absorbed through skin. OEL 8 hours: 4.2 mg/m³. OEL 8 hours: 1 ppm. **CA British Columbia Provincial (Canada, 4/2024)** Absorbed through skin. TWA 8 hours: 1 ppm. **CA Ontario Provincial (Canada, 6/2019)** Absorbed through skin. TWA 8 hours: 1 ppm. **CA Quebec Provincial (Canada, 2/2024)** Absorbed through skin. TWAEV 8 hours: 1 ppm. TWAEV 8 hours: 4.2 mg/m³. **CA Saskatchewan Provincial (Canada, 4/2021)** Absorbed through skin. STEL 15 minutes: 2 ppm. TWA 8 hours: 1 ppm.
3-aminomethyl-3,5,5-trimethylcyclohexylamine	None.
4,4'-methylenebis(cyclohexylamine)	None.
Formaldehyde, polymer with benzenamine, hydrogenated	None.
bisphenol A	**IPEL (-)** STEL: 5 mg/m³.
phenol	**CA Alberta Provincial (Canada, 3/2023)** Absorbed through skin. OEL 8 hours: 19 mg/m³. OEL 8 hours: 5 ppm. **CA British Columbia Provincial (Canada, 4/2024)** Absorbed through skin. TWA 8 hours: 5 ppm.

Section 8. Exposure controls/personal protection

	CA Ontario Provincial (Canada, 6/2019) Absorbed through skin. TWA 8 hours: 5 ppm. **CA Quebec Provincial (Canada, 2/2024)** Absorbed through skin. TWAEV 8 hours: 5 ppm. TWAEV 8 hours: 19 mg/m³. **CA Saskatchewan Provincial (Canada, 4/2021)** Absorbed through skin. STEL 15 minutes: 7.5 ppm. TWA 8 hours: 5 ppm.

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 : Use only with adequate ventilation. 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 and face shield.

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.

Section 8. Exposure controls/personal protection

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.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.
Color : Blue.
Odor : Ammoniacal.
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.
Vapor pressure : Not available.
Vapor density : Not available.
Relative density : 1.05
Density (lbs / gal) : 8.76

Solubility(ies) :

Media	Result
cold water	Not soluble

Partition coefficient: n-octanol/water : Not applicable.

Viscosity : Dynamic (room temperature): Not available.
Kinematic (room temperature): Not available.
Kinematic (40°C (104°F)): >21 mm^2/s (>21 cSt)

% Solid. (w/w) : 99.997

Particle characteristics

Median particle size : Not applicable.

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.

Section 10. Stability and reactivity

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.

Hazardous decomposition products : Depending on conditions, decomposition products may include the following materials: carbon oxides nitrogen oxides Formaldehyde.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Dose
m-phenylenebis(methylamine)	Rat - Oral - LD50	930 mg/kg
	Rat - Male, Female - Dermal - LD50	>3100 mg/kg
	Rat - Inhalation - LC50 Gas.	700 ppm [1 hours]
4-nonylphenol, branched	Rabbit - Dermal - LD50	2.14 g/kg
	Rat - Oral - LD50	1300 mg/kg
Poly[oxy(methyl-1,2-ethanediyl)], α-(2-aminomethylethyl)-ω-(2-aminomethylethoxy)-	Rat - Oral - LD50	2885 mg/kg
	Rat - Dermal - LD50	2980 mg/kg
1,3-Benzenedimethanamine, polymer with 2,2'-[(1-methylethylidene)bis (4,1-phenyleneoxymethylene)]bis[oxirane]	Rat - Female - Oral - LD50	1000 mg/kg
	Rat - Male, Female - Dermal - LD50	>2000 mg/kg
2,2'-iminodiethylamine	Rat - Oral - LD50	1080 mg/kg
	Rabbit - Dermal - LD50	1090 mg/kg
	Rat - Inhalation - LC50 Dusts and mists	0.07 to 0.3 mg/l [4 hours]
3-aminomethyl-3,5,5-trimethylcyclohexylamine	Rat - Oral - LD50	1030 mg/kg
	Rat - Dermal - LD50	>2000 mg/kg
	Rat - Inhalation - LC50 Dusts and mists	>5.01 mg/l [4 hours]
4,4'-methylenebis(cyclohexylamine)	Rat - Oral - LD50	0.625 g/kg
	Rabbit - Dermal - LD50	2.11 g/kg
Formaldehyde, polymer with benzenamine, hydrogenated	Rat - Oral - LD50	300 mg/kg
bisphenol A	Rat - Oral - LD50	3.25 g/kg
	Rabbit - Dermal - LD50	3600 mg/kg
phenol	Rat - Dermal - LD50	669 mg/kg
	Rat - Oral - LD50	0.34 g/kg
	Rat - Inhalation - LC50 Dusts and mists	900 mg/m³ [4 hours]

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

Skin corrosion/irritation

Section 11. Toxicological information

Product/ingredient name	Species	Dose	Score
m-phenylenebis (methylamine)	Rat - Skin - Severe irritant	Duration of treatment/exposure: 4 hours Observation period: 4 hours	-
4-nonylphenol, branched	Rabbit - Skin - Erythema/ Eschar	-	Irritation score: 4

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

Serious eye damage/eye irritation

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

Respiratory corrosion/irritation

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

Sensitization

Product/ingredient name	Species	Result
m-phenylenebis(methylamine)	Mouse - skin OECD 429	Result: Sensitizing
3-aminomethyl-3,5,5-trimethylcyclohexylamine	Guinea pig - skin OECD 406	Result: Sensitizing

Skin

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

Respiratory

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

Mutagenicity

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

Carcinogenicity

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

Classification

Product/ingredient name	OSHA	IARC	NTP
phenol	-	3	-

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.

Specific target organ toxicity (single exposure)

Product/ingredient name	Result
2,2'-iminodiethylamine	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
bisphenol A	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Result
4,4'-methylenebis(cyclohexylamine)	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (oral) - Category 2
Formaldehyde, polymer with benzenamine, hydrogenated	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (kidneys) (oral) - Category 2
phenol	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

Section 11. Toxicological information

Target organs : Contains material which causes damage to the following organs: skin.
Contains material which may cause damage to the following organs: blood, kidneys, lungs, the nervous system, the reproductive system, liver, gastrointestinal tract, cardiovascular system, upper respiratory tract, central nervous system (CNS), eye, lens or cornea, muscle tissue.

Information on the likely routes of exposure

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : Fatal if inhaled.

Skin contact : Causes severe burns. May cause an allergic skin reaction.

Ingestion : Harmful if swallowed. Corrosive to the digestive tract. Causes burns.

Over-exposure signs/symptoms

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

Inhalation : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
stomach pains
reduced fetal weight
increase in fetal deaths
skeletal malformations

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. Can form nitrosamines in the presence of certain organic materials and if heated. 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. Exposure to amine vapor has been reported to cause transient corneal edema described as blue haze, halo effect, foggy or blurred vision for several hours. This condition is typically temporary and does not cause permanent visual effects. When the proper eye protection specified in Section 8 is worn, exposure is significantly reduced and the condition has not been observed.

Short term exposure

Section 11. Toxicological information

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

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

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

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : Suspected of causing genetic defects.

Reproductive toxicity : May damage fertility or the unborn child.

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 405 BLUE UNLINED - B	1042.3	2177.4	7543.6	N/A	0.27
m-phenylenebis(methylamine)	930	2500	4500	N/A	N/A
4-nonylphenol, branched	1300	2140	N/A	N/A	N/A
Poly[oxy(methyl-1,2-ethanediyl)], α-(2-aminomethylethyl)-ω-(2-aminomethylethoxy)-	2885	2980	N/A	N/A	N/A
1,3-Benzenedimethanamine, polymer with 2,2'-[(1-methylethylidene)bis (4,1-phenyleneoxymethylene)]bis[oxirane]	1000	2500	N/A	N/A	N/A
2,2'-iminodiethylamine	1080	1090	N/A	N/A	0.05
3-aminomethyl-3,5,5-trimethylcyclohexylamine	1030	2500	N/A	N/A	N/A
4,4'-methylenebis(cyclohexylamine)	625	2110	N/A	N/A	N/A
Formaldehyde, polymer with benzenamine, hydrogenated	300	N/A	N/A	N/A	N/A
bisphenol A	3250	3600	N/A	N/A	N/A
phenol	100	669	N/A	N/A	0.9

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species
4-nonylphenol, branched	Acute - LC50 0.221 mg/l [96 hours] Acute - EC50 OECD 0.044 mg/l [48 hours] Effect: Intoxication Acute - EC50 OECD 0.04 mg/l [72 hours]	Fish Crustaceans - Water flea - *Moina macrocopa* Algae - Green algae - *Raphidocelis subcapitata*

Section 12. Ecological information

	Effect: Population	
Poly[oxy(methyl-1,2-ethanediyl)], α-(2-aminomethylethyl)-ω-(2-aminomethylethoxy)-	EC50 15 mg/l [72 hours]	Algae
1,3-Benzenedimethanamine, polymer with 2,2'-[(1-methylethylidene)bis (4,1-phenyleneoxymethylene)]bis[oxirane]	LC50 OECD [Fish, Acute Toxicity Test] 8.72 mg/l [96 hours]	Fish
	EC50 OECD [Daphnia sp. Acute Immobilization Test and Reproduction Test] 3.54 mg/l [48 hours]	Daphnia
	EC50 OECD [Alga, Growth Inhibition Test] 1.83 mg/l [72 hours]	Algae
2,2'-iminodiethylamine	Acute - LC50 430 mg/l [96 hours]	Fish
Formaldehyde, polymer with benzenamine, hydrogenated	Acute - LC50 63 mg/l [96 hours]	Fish
	Acute - EC50 15.4 mg/l [48 hours]	Daphnia
	Acute - EC50 43.94 mg/l [72 hours]	Algae
bisphenol A	Acute - LC50 - Fresh water 4.6 mg/l [96 hours]	Fish
	Acute - LC50 - Fresh water 0.885 mg/l [48 hours]	Crustaceans
	Chronic - NOEC - Fresh water 0.000174 mg/l [5 months]	Fish
	Acute - EC50 OECD 1.32 mg/l [72 hours] Effect: Population	Algae - Green algae - *Raphidocelis subcapitata*
	Chronic - EC10 OECD 1189 µg/l [72 hours] Effect: Population	Algae - Green algae - *Raphidocelis subcapitata*
phenol	Chronic - IC10 - Fresh water OECD Age: 24 hours 2.38 mg/l [21 days] Effect: Reproduction	Daphnia - Water flea - *Daphnia magna* - Neonate

Conclusion/Summary : Not available.

Persistence and degradability

Product/ingredient name	Result
2,2'-iminodiethylamine	87% [21 days] - Readily
Formaldehyde, polymer with benzenamine, hydrogenated	0% [28 days] - Not readily

Conclusion/Summary : Not available.

Section 12. Ecological information

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
m-phenylenebis (methylamine)	0.18	2.69	Low
4-nonylphenol, branched	5.4	251.19	Low
1,3-Benzenedimethanamine, polymer with 2,2'-[(1-methylethylidene)bis (4,1-phenyleneoxymethylene)] bis[oxirane]	2.3	-	Low
2,2'-iminodiethylamine	-5.58	4.47	Low
3-aminomethyl-3,5,5-trimethylcyclohexylamine	0.99	-	Low
4,4'-methylenebis (cyclohexylamine)	2.03	-	Low
Formaldehyde, polymer with benzenamine, hydrogenated	2.68	209 to 219	Low
bisphenol A	3.4	43.65	Low
phenol	1.47	17.38	Low

Mobility in soil

Soil/Water partition coefficient : Not available.

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

Section 14. Transport information

Section 14. Transport information

	TDG	IMDG	IATA
UN number	UN2735	UN2735	UN2735
UN proper shipping name	AMINES, LIQUID, CORROSIVE, N.O.S. (m-phenylenebis (methylamine), 4-nonylphenol, branched)	AMINES, LIQUID, CORROSIVE, N.O.S. (m-phenylenebis (methylamine), 4-nonylphenol, branched)	Amines, liquid, corrosive, n.o. s. (m-phenylenebis (methylamine), 4-nonylphenol, branched)
Transport hazard class (es)	8	8	8
Packing group	III	III	III
Environmental hazards	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.
Marine pollutant substances	(4-nonylphenol, branched)	(4-nonylphenol, branched)	Not applicable.

Additional information

TDG : The marine pollutant mark is not required when transported by road or rail.

IMDG : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.

IATA : The environmentally hazardous substance mark may appear if required by other transportation regulations.

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.

Proof of classification statement : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.40-2.42 (Class 8), 2.7 (Marine pollutant mark).

Section 15. Regulatory information

National Inventory List

Canada inventory (DSL) : At least one component is not listed in DSL but all such components are listed in NDSL.

Section 16. Other information

Please refer to Section 2 of this document for GHS hazard classifications.
The customer is responsible for determining the PPE code for this material.

Date of issue/Date of revision **13 February 2025**

Organization that prepared the SDS : EHS

Section 16. Other information

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.