

SAFETY DATA SHEET



The information in this Safety Data Sheet is required pursuant to Hazardous Product Regulations 2015.

Date of issue/Date of revision 2 July 2024

Version 2.01

Section 1. Identification

Product name : RAVEN 405 UFS BLUE - B
Product code : 00465069
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 (dermal) - Category 4
SKIN CORROSION - Category 1
SERIOUS EYE DAMAGE - Category 1
SKIN SENSITIZATION - Category 1B
TOXIC TO REPRODUCTION - Category 1
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 1
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
Health Hazards Not Otherwise Classified - Category 1

GHS label elements

Section 2. Hazard identification

Hazard pictograms



Signal word

: Danger

Hazard statements

: Harmful if swallowed or in contact with skin.
 Causes severe skin burns and eye damage.
 May cause an allergic skin reaction.
 May damage fertility or the unborn child.
 Causes damage to organs. (respiratory tract)
 Causes damage to organs through prolonged or repeated exposure. (respiratory tract)
 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. 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: Call a POISON CENTER or doctor. 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. Wash contaminated clothing before reuse. IF ON SKIN: Call a POISON CENTER or doctor if you feel unwell. Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. 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. 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. Wash thoroughly after handling. Emits toxic fumes when heated.

Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity: 43.2% (oral), 47.4% (dermal), 77.5% (inhalation)

Section 3. Composition/information on ingredients

Substance/mixture

: Mixture

Product name

: RAVEN 405 UFS BLUE - B

Other means of identification

: Not available.

CAS number/other identifiers

Section 3. Composition/information on ingredients

Ingredient name	Synonyms	% (w/w)	CAS number
Poly[oxy(methyl-1,2-ethanediyl)], α -hydro- ω -hydroxy-, ether with 2,2-bis(hydroxymethyl)-1,3-propanediol (4:1), 2-hydroxy-3-mercaptopropyl ether	Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-hydroxy-, ether with 2,2-bis(hydroxymethyl)-1,3-propanediol (4:1), 2-hydroxy-3-mercaptopropyl ether; Tris[(2-hydroxymethyl, 2-mercaptomethyl)-1,3-propanediol; α -Hydro- ω -hydroxypoly[oxy(methyl-1,2-ethanediyl)] ether with 2,2-bis(hydroxymethyl)-1,3-propanediol (4:1), 2-hydroxy-3-mercaptopropyl ether; Trifunctional Mercaptan terminated polymer	30 - 60*	72244-98-5
2-piperazin-1-ylethylamine	1-Piperazineethanamine; 1-(2-Aminoethyl)piperazine; N-(Aminoethyl)piperazine; 2-(1-Piperazinyl) ethylamine; Piperazine, 1-(2-aminoethyl)-; 1-(2-AMINOETHYL)-PIPERAZINE; N-AMINOETHYLPIPERAZINE; 1-(2-AMINOETHYL)PIPERAZIN; 2-(Piperazin-1-yl)ethylamine; 1-Aminoethylpiperazine; PIPERAZINE, N-AMINOETHYL-	10 - 30*	140-31-8
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	7 - 13*	80-05-7
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; branched; Monoalkyl(C3-9)phenol; C9 branched alkyl phenol	5 - 10*	84852-15-3
2,4,6-tris(dimethylaminomethyl)phenol	Phenol, 2,4,6-tris[(dimethylamino)methyl]-; Phenol, 2,4,6-tris(dimethylaminomethyl)-; 2,4,6-tris((dimethylamino)methyl)phenol; Phenol, 2,4,6-tris{(dimethylamino)methyl}-; 2,4,6-Tris[(dimethylamino)methyl]phenol; 2,4,6-Tri(dimethylaminomethyl)phenol; 2,4,6-Tris(N,N-dimethylaminomethyl)phenol; 2,4,6-Tridimethylaminomethylphenol; TRIS (2,4,6-DIMETHYLAMINOMONOMETHYL)PHENOL; TRIS (2,4,6-DIMETHYLAMINOMETHYL)	3 - 7*	90-72-2

Section 3. Composition/information on ingredients

benzyl dimethylamine	PHENOL; TRIS[(DIMETHYLAMINO)METHYL]PHENOL, 2,4,6- Benzenemethanamine, N,N-dimethyl-; Benzylamine, N,N-dimethyl-; N,N-Dimethylbenzylamine; N-(Phenylmethyl) dimethylamine; Benzyl-N,N-dimethylamine; Dimethylbenzylamine; N-Benzyl dimethylamine; N,N-Dimethylbenzenemethanamine; N,N-dialkyl(C1-4) benzylamine; Benzylmethylamine; BDMA	1 - 5*	103-83-3
N,N,N',N'-tetramethyl-2,2'-oxybis(ethylamine)	Ethanamine, 2,2'-oxybis[N,N-dimethyl-; Bis(2-dimethylaminoethyl) ether; Bis(2-(dimethylamino)ethyl) ether; NIAX Catalyst A1; NIAX A99; 2,2'-Oxybis(N,N-dimethyl ethylamine); bis(2-Dimethylamino-ethyl) ether; DMAEE; Ethylamine, 2,2'-oxybis(N,N-dimethyl-; bis(dimethylaminoethyl) ether; bis(2-(DIMETHYLAMINO)-ETHYL)ETHER	1 - 5*	3033-62-3
alkyl carbomonocyclic diamine		0.5 - 1.5*	Not available.
4-tert-butylphenol	Phenol, 4-(1,1-dimethylethyl)-; Phenol, p-tert-butyl-; p-tert-Butylphenol; Phenol, p-(tert-butyl)-; 4-(1,1-DIMETHYLETHYL) PHENOL; TERT-BUTYLPHENOL, P-; BUTYLPHEN; BUTYLPHENOL, P-TERT-; P-T-BUTYLPHENOL; para-tert-BUTYLPHENOL; 1-Hydroxy-4-tert-butylbenzene	0.5 - 1.5*	98-54-4
1,8-diazabicyclo[5.4.0]undec-7-ene	Pyrimido[1,2-a]azepine, 2,3,4,6,7,8,9,10-octahydro-; 1,5-Diazabicyclo[5.4.0]; 2,3,4,6,7,8,9,10-octahydropyrimido[1,2-a] azepine; Pyrimido 1,2-a azepine, 2,3,4,6,7,8,9,10-octahyd; 1,5-Diazabicyclo [5.4.0]undec-5-ene; 1,8-Diazabicyclo [5.4,0]undecene-7; 1,8-diazabicyclo[5.4.0] undeca-7-ene; BICYCLO[5.4.0]UNDEC-7-ENE, 1,8-DIAZA-; PYRIMIDO(1,2-A) AZEPINE 2,3,4,6,7,8,9,10-OCTAHYDRO-; 1-8-diazabicyclo[5.4.0]undec-7-ene; 1,8-Diazabicyclo-5,4,0-undecene-7	0.5 - 1.5*	6674-22-2
phenylalkyl alcohol		0.1 - 1*	Not available.

*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.

Section 3. Composition/information on ingredients

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** : No known significant effects or critical hazards.
- Skin contact** : Causes severe burns. Harmful in contact with skin. Causes damage to organs following a single exposure in contact with skin. May cause an allergic skin reaction.
- Ingestion** : Harmful if swallowed. Corrosive to the digestive tract. Causes burns. Causes damage to organs following a single exposure if swallowed.

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

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.

Section 4. First-aid measures

- 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
sulfur oxides
- 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".
- 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.

Section 6. Accidental release measures

- 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. 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** : 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

Section 8. Exposure controls/personal protection

Ingredient name	Exposure limits
Poly[oxy(methyl-1,2-ethanediyl)], α -hydro- ω -hydroxy-, ether with 2,2-bis(hydroxymethyl)-1,3-propanediol (4:1), 2-hydroxy-3-mercaptopropyl ether	None.
2-piperazin-1-ylethylamine	None.
bisphenol A	IPEL (-). STEL: 5 mg/m ³
4-nonylphenol, branched	None.
2,4,6-tris(dimethylaminomethyl)phenol	None.
benzyl dimethylamine	None.
N,N,N',N'-tetramethyl-2,2'-oxybis(ethylamine)	CA Alberta Provincial (Canada, 3/2023). Absorbed through skin. OEL: 0.05 ppm 8 hours. OEL: 0.3 mg/m ³ 8 hours. OEL: 0.15 ppm 15 minutes. OEL: 0.98 mg/m ³ 15 minutes. CA British Columbia Provincial (Canada, 8/2023). Absorbed through skin. TWA: 0.05 ppm 8 hours. STEL: 0.15 ppm 15 minutes. CA Saskatchewan Provincial (Canada, 7/2013). Absorbed through skin. STEL: 0.15 ppm 15 minutes. TWA: 0.05 ppm 8 hours. CA Ontario Provincial (Canada, 6/2019). Absorbed through skin. STEL: 0.15 ppm 15 minutes. TWA: 0.05 ppm 8 hours.
alkyl carbomonocyclic diamine	None.
4-tert-butylphenol	None.
1,8-diazabicyclo[5.4.0]undec-7-ene	None.
phenylalkyl alcohol	None.

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.

Section 8. Exposure controls/personal protection

- 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.
- 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.
- 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** : 1.1
- Density (lbs / gal)** : 9.18

	Media	Result
Solubility(ies)	cold water	Not soluble

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

Section 9. Physical and chemical properties

Viscosity	: Kinematic (40°C (104°F)): >21 mm ² /s (>21 cSt)
Volatility	: 5% (v/v), 3.587% (w/w)
% Solid. (w/w)	: 96.413

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

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2-piperazin-1-ylethylamine	LC50 Inhalation Dusts and mists	Rat	>5 mg/l	4 hours
	LD50 Dermal	Rabbit	866 mg/kg	-
	LD50 Oral	Rat	2140 mg/kg	-
bisphenol A	LD50 Dermal	Rabbit	3600 mg/kg	-
	LD50 Oral	Rat	3.25 g/kg	-
	LD50 Dermal	Rabbit	2.14 g/kg	-
4-nonylphenol, branched	LD50 Dermal	Rat	1300 mg/kg	-
	LD50 Oral	Rat	1280 mg/kg	-
	LD50 Dermal	Rat	1280 mg/kg	-
2,4,6-tris (dimethylaminomethyl) phenol	LD50 Oral	Rat	1200 mg/kg	-
	LD50 Dermal	Rabbit	1.16 g/kg	-
	LD50 Oral	Rat	0.239 g/kg	-
N,N,N',N'-tetramethyl-2,2'- oxybis(ethylamine)	LC50 Inhalation Vapor	Rat	4 mg/l	4 hours
	LD50 Dermal	Rabbit	280 mg/kg	-
	LD50 Oral	Rat	0.571 g/kg	-
4-tert-butylphenol	LD50 Dermal	Rabbit	2.29 g/kg	-
	LD50 Oral	Rat	2.95 g/kg	-
	LD50 Dermal	Rabbit	1.233 g/kg	-
1,8-diazabicyclo[5.4.0] undec-7-ene	LD50 Dermal	Rabbit	1.233 g/kg	-
	LD50 Oral	Rat	0.836 g/kg	-

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

Section 11. Toxicological information

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
4-nonylphenol, branched	Skin - Erythema/Eschar	Rabbit	4	-	-

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
2-piperazin-1-ylethylamine	skin	Guinea pig	Sensitizing

- 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.

Carcinogenicity

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

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
bisphenol A	Category 3	-	Respiratory tract irritation
N,N,N',N'-tetramethyl-2,2'-oxybis(ethylamine) alkyl carbomonocyclic diamine	Category 1 Category 3	inhalation -	respiratory tract Respiratory tract irritation
phenylalkyl alcohol	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
2-piperazin-1-ylethylamine	Category 1	inhalation	respiratory tract
N,N,N',N'-tetramethyl-2,2'-oxybis(ethylamine)	Category 2	-	-
alkyl carbomonocyclic diamine	Category 1	-	-
phenylalkyl alcohol	Category 1	-	-

Target organs

- : Contains material which causes damage to the following organs: upper respiratory tract, skin.
 Contains material which may cause damage to the following organs: kidneys, the reproductive system, liver, bladder, peripheral nervous system, gastrointestinal tract, central nervous system (CNS), eye, lens or cornea.

Aspiration hazard

Section 11. Toxicological information

Not available.

Information on the likely routes of exposure

Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes severe burns. Harmful in contact with skin. Causes damage to organs following a single exposure in contact with skin. May cause an allergic skin reaction.
- Ingestion** : Harmful if swallowed. Corrosive to the digestive tract. Causes burns. Causes damage to organs following a single exposure if swallowed.

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. 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. 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

Section 11. Toxicological information

worm, exposure is significantly reduced and the condition has not been observed.

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 : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

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 UFS BLUE - B	1476.3	1248.2	N/A	39.7	5.4
2-piperazin-1-ylethylamine	2140	866	N/A	N/A	N/A
bisphenol A	3250	3600	N/A	N/A	N/A
4-nonylphenol, branched	1300	2140	N/A	N/A	N/A
2,4,6-tris(dimethylaminomethyl)phenol	1200	1280	N/A	N/A	N/A
benzyl dimethylamine	500	1160	N/A	11	1.5
N,N,N',N'-tetramethyl-2,2'-oxybis(ethylamine)	571	280	N/A	11	1.5
alkyl carbomonocyclic diamine	500	1100	N/A	N/A	N/A
4-tert-butylphenol	2950	2290	N/A	N/A	N/A
1,8-diazabicyclo[5.4.0]undec-7-ene	836	1233	N/A	N/A	N/A
phenylalkyl alcohol	500	1100	N/A	N/A	N/A

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
2-piperazin-1-ylethylamine bisphenol A	Acute EC50 58 mg/l	Daphnia	48 hours
	Acute LC50 0.885 mg/l Fresh water	Crustaceans	48 hours
	Acute LC50 8.11 mg/l Fresh water	Daphnia - <i>Daphnia magna</i> - Neonate	48 hours
	Acute LC50 4.6 mg/l Fresh water	Fish	96 hours
4-nonylphenol, branched	Chronic NOEC 0.000174 mg/l Fresh water	Fish	5 months
	Acute EC50 0.044 mg/l	Crustaceans - <i>Moina macrocopa</i>	48 hours
2,4,6-tris	Acute LC50 0.221 mg/l	Fish	96 hours
	Acute LC50 >100 mg/l	Daphnia	48 hours

Section 12. Ecological information

(dimethylaminomethyl)phenol	Acute LC50 >100 mg/l	Fish	96 hours
alkyl carbomonocyclic diamine	NOEC 1.5 mg/l	Algae - <i>Desmodesmus subspicatus</i>	72 hours
phenylalkyl alcohol	EC50 640 mg/l	Algae - <i>Scenedesmus quadricauda</i>	96 hours

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
2-piperazin-1-ylethylamine	OECD 301F	0 % - Not readily - 28 days	-	-
2,4,6-tris	OECD 301D	4 % - Not readily - 28 days	-	-
(dimethylaminomethyl)phenol	Ready Biodegradability - Closed Bottle Test			

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
2-piperazin-1-ylethylamine	-	-	Not readily
bisphenol A	-	-	Readily
2,4,6-tris	-	-	Not readily
(dimethylaminomethyl)phenol			

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
2-piperazin-1-ylethylamine	-1.48	-	Low
bisphenol A	3.4	43.65	Low
4-nonylphenol, branched	5.4	251.19	Low
2,4,6-tris	0.219	-	Low
(dimethylaminomethyl)phenol			
benzyl dimethylamine	1.98	14.13	Low
4-tert-butylphenol	3	67.61	Low
1,8-diazabicyclo[5.4.0]undec-7-ene	1.38	<3.6	Low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : 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

Section 13. Disposal considerations

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

	TDG	IMDG	IATA
UN number	UN2735	UN2735	UN2735
UN proper shipping name	AMINES, LIQUID, CORROSIVE, N.O.S. (2-piperazin-1-ylethylamine, 4-nonylphenol, branched)	AMINES, LIQUID, CORROSIVE, N.O.S. (2-piperazin-1-ylethylamine, 4-nonylphenol, branched)	Amines, liquid, corrosive, n.o.s. (2-piperazin-1-ylethylamine, 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	(bisphenol A)	(bisphenol A)	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.

Transport in bulk according to IMO instruments : Not applicable.

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) : All components are listed or exempted.

Section 16. Other information

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

Health : 4 * 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 : 4 Flammability : 1 Instability : 0

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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

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