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 November 2026
Version 1.08

Section 1. Identification

Product name : PPG VERSAFLEX 234 - A
Product code : 00465025
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 Canada Inc.
5676 Timberlea Blvd
Mississauga ON L4W 4M6
Canada
+1 905-629-7999

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 (inhalation) - Category 4
SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
RESPIRATORY SENSITIZATION - Category 1A
SKIN SENSITIZATION - Category 1A
CARCINOGENICITY - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

GHS label elements

Section 2. Hazard identification

Hazard pictograms :



Signal word : Danger

Hazard statements : Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.
Harmful if inhaled.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause respiratory irritation.
Suspected of causing cancer.
May cause damage to organs through prolonged or repeated exposure. (adrenal, respiratory system)

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. Wear respiratory protection. Use only outdoors or in a well-ventilated area. Do not breathe vapor. 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. Call a POISON CENTER or doctor if you feel unwell. If experiencing respiratory symptoms: Call a POISON CENTER or doctor. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. Take off contaminated clothing and wash it before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.
Photosensitive agents : In case of accidental eye contact, avoid direct exposure to the sun or other sources of UV light as severe irritation including burns may result. These reactions can be delayed – get medical attention if pain, irritation or blistering occurs after contact. In case of accidental skin contact, avoid direct exposure to the sun or other sources of UV light as severe irritation including burns may result. These reactions can be delayed – get medical attention if pain, irritation, rash or blistering occurs after contact.

Storage : Store locked up. Store in a well-ventilated place. Keep container tightly closed.

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

Supplemental label elements : Moisture-sensitive material. Skin contact to isocyanate monomer may lead to allergic lung reaction. Based on the properties of the isocyanate components and considering toxicological data on similar mixtures, this mixture may cause acute irritation and/or sensitization of the respiratory system, leading to an asthmatic condition, wheezing and tightness of the chest. Sensitized persons may subsequently show asthmatic symptoms when exposed to atmospheric concentrations well below the OEL. Repeated exposure may lead to permanent respiratory disability. Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Emits toxic fumes when heated.
Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity: 38.1% (oral), 77.3% (dermal), 34.9% (inhalation)

Other hazards which do not result in classification : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Product name : PPG VERSAFLEX 234 - A
Other means of identification : Not available.

CAS number/other identifiers

Ingredient name	Synonyms	% (w/w)	CAS number
4,4'-methylenediphenyl diisocyanate	4,4’-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate; Benzene, 1,1'-methylenebis[4-isocyanato-; Benzene, 1,1'-methylenebis(4-isocyanato-; 4,4'-Diisocyanatodiphenylmethane	10 - 30*	101-68-8
Isocyanic acid, polymethylenepolyphenylene ester	Polymethylenepolyphenyl isocyanate; Polymeric diphenylmethane diisocyanate; PAPI; polymeric MDI; METHYLENE DIPHENYL DIISOCYANATE	10 - 30*	9016-87-9
o-(p-isocyanatobenzyl)phenyl isocyanate	diphenylmethane-2,4'-diisocyanate; Benzene, 1-isocyanato-2-[(4-isocyanatophenyl)methyl]-; Benzene, 1-isocyanato-2-((4-isocyanatophenyl) methyl)-; Benzene, 1-isocyanato-2-[4-isocyanatophenyl)methyl]-; 1-isocyanato-2-(4-isocyanatobenzyl) benzene	10 - 30*	5873-54-1
propylene carbonate	1,3-Dioxolan-2-one, 4-methyl-; Carbonic acid, cyclic methylethylene ester; catalyst containing by weight: —25 % or more but not more than 27,5 % of bis[4-(diphenylsuphonio)phenyl]sulphide bis (hexafluoroantimonate) , and —20 % or more but not more than 22,5 % of diphenyl(4-phenylthio)phenylsufonium hexafluoroantimonate in propylene carbonate; catalyst consisting by weight of: —30 % or more but not more than 33 % of bis(4-(diphenylsulphonio)phenyl) sulphide bis(hexafluorophosphate) , and —24 % or more but not more than 27 % of diphenyl(4-phenylthio) phenylsuphonium hexafluorophosphate in propylene carbonate; 4-methyl-1,3-dioxolan-2-one	7 - 13*	108-32-7
2,2'-methylenediphenyl diisocyanate	2,2’-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate; Benzene, 1,1'-methylenebis[2-isocyanato-; 1,1'-Methylenebis[2-isocyanatobenzene; 1,1'-methanediylbis(2-isocyanatobenzene)	1 - 5*	2536-05-2
methylenediphenyl diisocyanate	Benzene, 1,1'-methylenebis[isocyanato-; Benzene, 1,1'-methylenebis(isocyanato-; Diphenylmethane diisocyanate; Benzene,	1 - 5*	26447-40-5

Section 3. Composition/information on ingredients

	1,1'-methylenebis[isocyanato]-; MDI		
2-ethylhexyl 3,5,5-trimethylhexanoate	Hexanoic acid, 3,5,5-trimethyl-, 2-ethylhexyl ester; 3,5,5-Trimethylhexanoic acid, 2-ethylhexyl ester; Alkyl(C1-10) alkanoate (C6-10); 3,5,5-Trimethylhexanoic acid 2-ethylhexyl ester	0.5 - 1.5*	70969-70-9
2,4-dioxo-1,3-diazetidine-1,3-diylbis[p-phenylenemethylene-p-phenylene] diisocyanate	1,3-Diazetidine-2,4-dione, 1,3-bis[4-[(4-isocyanatophenyl)methyl]phenyl]-; 1,3-Bis[4-[(4-isocyanatophenyl)methyl; 1,3-Bis[4-[(4-isocyanatophenyl)methyl] phenyl]-1,3-diazetidine-2,4-dione; DIAZETIDINE(1,3)-2,4-DIONE, 1,3-BIS(4-((4- ISOCYANATOPHENYL)METHYL) PHENYL)-	0.1 - 1*	17589-24-1
Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.-hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl)	Isocyanic acid, polymethylenepolyphenylene ester, polymer with α-hydro-ω-hydroxypoly(oxy-1,2-ethanediyl); 2-Oxepanone, polymer with 2-ethyl-2-(hydroxymethyl) -1,3-propanediol, 5-isocyanato-1-(isocyanatomethyl) -1,3,3-trimethylcyclohexane and 2,2'-oxybis[ethanol], 2-hydroxyethyl acrylate-blocked; Isocyanic acid, polymethylenepolyphenylene ester, polymer with alpha-hydro-omega-hydroxypoly(oxy-1,2-ethanediyl); Polymethylene polyphenylisocyanate, polyethylene glycol polymer; Isocyanic acid, polymethylene ester, polymer with . alpha.-hydro-, omega-hydroxypoly (oxy-1,2-ethanediyl)	0.1 - 1*	57636-09-6

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 : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.

Section 4. First-aid measures

In case of accidental eye contact, avoid direct exposure to the sun or other sources of UV light as severe irritation including burns may result. These reactions can be delayed – get medical attention if pain, irritation or blistering occurs after contact.

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.

In case of accidental skin contact, avoid direct exposure to the sun or other sources of UV light as severe irritation including burns may result. These reactions can be delayed – get medical attention if pain, irritation, rash or blistering occurs after contact.

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 irritation.

Inhalation : Harmful if inhaled. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

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 : Adverse symptoms may include the following:
respiratory tract irritation
coughing
wheezing and breathing difficulties
asthma

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.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon oxides
nitrogen oxides
Cyanate and isocyanate.
hydrogen cyanide

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. 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.

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 6. Accidental release measures

Special provisions : 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). Place in a suitable container. The contaminated area should be cleaned immediately with a suitable decontaminant. One possible (flammable) decontaminant comprises (by volume): water (45 parts), ethanol or isopropyl alcohol (50 parts) and concentrated (d: 0,880) ammonia solution (5 parts). A non-flammable alternative is sodium carbonate (5 parts) and water (95 parts). Add the same decontaminant to the remnants and let stand for several days until no further reaction in an unsealed container. Once this stage is reached, close container and dispose of according to local regulations (see section 13). Do not allow to enter drains or watercourses. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

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 or asthma, allergies or chronic or recurrent respiratory disease 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. 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.
Precautions should be taken to minimize exposure to atmospheric humidity or water. CO_2 will be formed, which, in closed containers, could result in pressurization.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
4,4'-methylenediphenyl diisocyanate	**CA Alberta Provincial (Canada, 3/2023)** OEL 8 hours: 0.005 ppm. OEL 8 hours: 0.05 mg/m³. **CA British Columbia Provincial (Canada, 8/2025)** Inhalation sensitizer. TWA 8 hours: 0.005 ppm. C: 0.01 ppm. **CA Ontario Provincial (Canada, 6/2019) [Isocyanates, organic compounds]** Ceiling Limit: 0.02 ppm. TWA 8 hours: 0.005 ppm. **CA Quebec Provincial (Canada, 2/2024)** Sensitizer. TWAEV 8 hours: 0.005 ppm. TWAEV 8 hours: 0.051 mg/m³. **CA Saskatchewan Provincial (Canada, 4/2021)** STEL 15 minutes: 0.015 ppm. TWA 8 hours: 0.005 ppm.
Isocyanic acid, polymethylenepolyphenylene ester	**CA Alberta Provincial (Canada, 3/2023)** OEL 8 hours: 0.07 mg/m³. OEL 8 hours: 0.005 ppm. **CA Ontario Provincial (Canada, 6/2019) [Isocyanates, organic compounds]** Ceiling Limit: 0.02 ppm. TWA 8 hours: 0.005 ppm. **CA Quebec Provincial (Canada, 2/2024) [Isocyanate oligomers]** Sensitizer.
o-(p-isocyanatobenzyl)phenyl isocyanate	**CA British Columbia Provincial (Canada, 8/2025) [diisocyanates, not elsewhere specified, NOS]** TWA 8 hours: 0.005 ppm. C: 0.01 ppm. **CA Ontario Provincial (Canada, 6/2019) [Isocyanates, organic compounds]** Ceiling Limit: 0.02 ppm. TWA 8 hours: 0.005 ppm. **CA Quebec Provincial (Canada, 2/2024) [Isocyanate oligomers]** Sensitizer.
propylene carbonate	None.
2,2'-methylenediphenyl diisocyanate	**CA British Columbia Provincial (Canada, 8/2025) [diisocyanates, not elsewhere specified, NOS]** TWA 8 hours: 0.005 ppm. C: 0.01 ppm. **CA Ontario Provincial (Canada, 6/2019) [Isocyanates, organic compounds]** Ceiling Limit: 0.02 ppm. TWA 8 hours: 0.005 ppm. **CA Quebec Provincial (Canada, 2/2024)**

Section 8. Exposure controls/personal protection

methylenediphenyl diisocyanate	**[Isocyanate oligomers]** Sensitizer. **CA British Columbia Provincial (Canada, 8/2025) [diisocyanates, not elsewhere specified, NOS]** TWA 8 hours: 0.005 ppm. C: 0.01 ppm. **CA Ontario Provincial (Canada, 6/2019) [Isocyanates, organic compounds]** Ceiling Limit: 0.02 ppm. TWA 8 hours: 0.005 ppm. **CA Quebec Provincial (Canada, 2/2024) [Isocyanate oligomers]** Sensitizer.
2-ethylhexyl 3,5,5-trimethylhexanoate	None.
2,4-dioxo-1,3-diazetidine-1,3-diylbis[p-phenylenemethylene-p-phenylene] diisocyanate	**CA Quebec Provincial (Canada, 2/2024) [Isocyanate oligomers]** Sensitizer.
Isocyanic acid, polymethylenepolyphenylene ester, polymer with . alpha.-hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl)	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 : 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.

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 : polyethylene 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.

Section 8. Exposure controls/personal protection

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 : Use an air-fed respirator unless a site-specific assessment determines that an air-fed respirator is not necessary, in which case the results of the risk assessment should be utilized to determine whether respiratory protection is necessary and what type of protection is appropriate. 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.

Restrictions on use : Persons with a history of asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.
Color : Various

Odor : Faint odor.

pH : Not applicable.

Melting point : Not available.

Boiling point : >37.78°C (>100°F)

Flash point : Closed cup: 167°C (332.6°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 : 1.17

Density (lbs / gal) : 9.76

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) : 89.443

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 : In a fire, hazardous decomposition products may be produced.
Refer to protective measures listed in sections 7 and 8.

Incompatible materials : Keep away from: oxidizing agents, strong alkalis, strong acids, amines, alcohols, water. Uncontrolled exothermic reactions occur with amines and alcohols.

Hazardous decomposition products : Depending on conditions, decomposition products may include the following materials:
Cyanate and isocyanate. carbon oxides nitrogen oxides hydrogen cyanide

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Dose
4,4'-methylenediphenyl diisocyanate	Rat - Oral - LD50	9200 mg/kg
Isocyanic acid, polymethylenepolyphenylene ester	Rat - Oral - LD50	49 g/kg
	Rabbit - Dermal - LD50	>9400 mg/kg
propylene carbonate	Rat - Oral - LD50	29 g/kg
methylenediphenyl diisocyanate	Rat - Oral - LD50	>10000 mg/kg
	Rabbit - Dermal - LD50	>9400 mg/kg
2-ethylhexyl 3,5,5-trimethylhexanoate	Rat - Female - Oral - LD50	≥5000 mg/kg

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

Skin corrosion/irritation

Product/ingredient name	Species	Dose	Score
4,4'-methylenediphenyl diisocyanate	Rabbit - Skin - Irritant	-	-

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
4,4'-methylenediphenyl diisocyanate	Mouse - skin OECD 429	Sensitizing
	Guinea pig - Respiratory	Sensitizing
methylenediphenyl diisocyanate	Guinea pig - skin OECD 406	Sensitizing
	Guinea pig - Respiratory	Sensitizing

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

Section 11. Toxicological information

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

Product/ingredient name	Species	Result
4,4'-methylenediphenyl diisocyanate	Rat - Inhalation - TC OECD 453 0 to 6 mg/m³ [5 days per week] [2 years]	Result: Positive

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

Classification

Product/ingredient name	OSHA	IARC	NTP
4,4'-methylenediphenyl diisocyanate	-	3	-
Isocyanic acid, polymethylenepolyphenylene ester	-	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
4,4'-methylenediphenyl diisocyanate	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
Isocyanic acid, polymethylenepolyphenylene ester	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
o-(p-isocyanatobenzyl)phenyl isocyanate	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
2,2'-methylenediphenyl diisocyanate	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
methylenediphenyl diisocyanate	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
2,4-dioxo-1,3-diazetidine-1,3-diylbis[p-phenylenemethylene-p-phenylene] diisocyanate	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.-hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl)	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Result
4,4'-methylenediphenyl diisocyanate	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (respiratory system) (inhalation) - Category 2
Isocyanic acid, polymethylenepolyphenylene ester	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (inhalation) - Category 2
o-(p-isocyanatobenzyl)phenyl isocyanate	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
2,2'-methylenediphenyl diisocyanate	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
methylenediphenyl diisocyanate	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) -

Section 11. Toxicological information

2-ethylhexyl 3,5,5-trimethylhexanoate	Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (adrenal) (oral) - Category 2
2,4-dioxo-1,3-diazetidine-1,3-diylbis[p-phenylenemethylene-p-phenylene] diisocyanate	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (nose/sinuses) (inhalation) - Category 2
Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.-hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl)	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (nose/sinuses) (inhalation) - Category 2

Target organs : Contains material which causes damage to the following organs: lungs, upper respiratory tract, eyes, nose/sinuses, throat.
Contains material which may cause damage to the following organs: skin, adrenal.

Information on the likely routes of exposure

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Harmful if inhaled. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

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 : Adverse symptoms may include the following:
respiratory tract irritation
coughing
wheezing and breathing difficulties
asthma

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. Skin contact to isocyanate monomer may lead to allergic lung reaction. Based on the properties of the isocyanate components and considering toxicological data on similar mixtures, this mixture may cause acute irritation and/or sensitization of the respiratory system, leading to an asthmatic condition, wheezing and tightness of the chest. Repeated exposure may lead to permanent respiratory disability. Acrylate components of the mixture have irritating properties. Prolonged or repeated contact with skin or mucous membrane may result in irritation symptoms, such as redness, blistering, dermatitis etc. May cause allergic skin reactions with repeated exposure. The inhalation of airborne droplets or aerosols may cause irritation of the respiratory tract. Ingestion may cause nausea, weakness and central nervous system effects. If splashed in the eyes, the liquid may cause irritation and reversible damage. 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.

Section 11. Toxicological information

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

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 : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

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)
PPG VERSAFLEX 234 - A	N/A	N/A	N/A	16.3	2.7
4,4'-methylenediphenyl diisocyanate	9200	N/A	N/A	11	N/A
Isocyanic acid, polymethylenepolyphenylene ester	49000	N/A	N/A	N/A	1.5
o-(p-isocyanatobenzyl)phenyl isocyanate	N/A	N/A	N/A	11	1.5
propylene carbonate	29000	N/A	N/A	N/A	N/A
2,2'-methylenediphenyl diisocyanate	N/A	N/A	N/A	11	1.5
methylenediphenyl diisocyanate	N/A	N/A	N/A	11	1.5
2,4-dioxo-1,3-diazetidine-1,3-diylbis[p-phenylenemethylene-p-phenylene] diisocyanate	N/A	N/A	N/A	N/A	1.5
Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.-hydro-.omega.-hydroxypoly (oxy-1,2-ethanediyl)	N/A	N/A	N/A	N/A	1.5

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species
methylenediphenyl diisocyanate	Acute - LC50 >100 mg/l [96 hours]	Fish

Conclusion/Summary : Not available.

Persistence and degradability

Section 12. Ecological information

Product/ingredient name	Result
2-ethylhexyl 3,5,5-trimethylhexanoate	OECD [Ready Biodegradability - Manometric Respirometry Test] 59% [28 days] - Inherent

Conclusion/Summary : Not available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
4,4'-methylenediphenyl diisocyanate	4.51	-	High
o-(p-isocyanatobenzyl) phenyl isocyanate	4.51	-	High
propylene carbonate	-0.41	-	Low
2,2'-methylenediphenyl diisocyanate	5.22	-	High
methylenediphenyl diisocyanate	4.51	-	High
2-ethylhexyl 3,5,5-trimethylhexanoate	7.14 to 7.19	-	High

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

	TDG	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class (es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Marine pollutant substances	Not applicable.	Not applicable.	Not applicable.

Additional information

TDG : None identified.
IMDG : None identified.
IATA : None identified.

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.

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 November 2026**

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.

Section 16. Other information

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.