SAFETY DATA SHEET



Date of issue/Date of revision13 December 2021Version 2.02

Section 1. Identification of the substance/mixture and of the company/undertaking

Product code	:	00346203
Product name	:	NOVAGUARD 4801 BASE
Other means of identification	:	Not available.
Product type	:	Liquid.

Relevant identified uses of the substance or mixture and uses advised against		
Product use	Coating. Professional applications, Used by spraying.	
Uses advised against	: Product is not intended, labelled or packaged for consumer use.	
Supplier's details	: PPG Coatings (Thailand) Co., Ltd. 15 Rama 9 Road, Kwaeng Huamark, Khet Bangkapi, Bangkok 10240 Thailand T: 662-319-4190 #224 F: 662-319-4189	
Emergency telephone number (with hours of operation)	: CHEMTREC 001-800-13-203-9987 (CCN 17704)	

Section 2. Hazards identification

: FLAMMABLE LIQUIDS - Category 3
ACUTE TOXICITY (inhalation) - Category 4
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
SKIN SENSITIZATION - Category 1B
TOXIC TO REPRODUCTION - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1 AQUATIC HAZARD (ACUTE) - Category 2
AQUATIC HAZARD (LONG-TERM) - Category 3
Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 69%

Section 2. Hazards identification

Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 72%

GHS label elements		
Hazard pictograms	:	
Signal word	:	Danger
Hazard statements	:	Flammable liquid and vapor. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. Harmful if inhaled. May cause respiratory irritation. Suspected of damaging fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure. (hearing organs) Toxic to aquatic life. Harmful to aquatic life with long lasting effects.
Precautionary statements		
Prevention	:	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non- sparking tools. Take action to prevent static discharges. Use only outdoors or in a well-ventilated area. Avoid release to the environment. 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. Call a POISON CENTER or doctor if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Take off contaminated clothing and wash before reuse. Wash contaminated clothing before reuse. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. 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.
Storage	1	Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.
Disposal	:	Dispose of contents and container in accordance with all local, regional, national and international regulations.
Other hazards which do not result in classification	:	Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

CAS number/other identifiers

CAS number : Not applicable.		
Ingredient name	%	CAS number
styrene methyl methacrylate	25- <50 3 - <5	100-42-5 80-62-6

There are no 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.

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.

SUB codes represent substances without registered CAS Numbers.

Section 4. First aid measures

Description of necessary first aid measures

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

Most important symptoms/effects, acute and delayed

Potential acute health effects	
Eye contact	: Causes serious eye irritation.
Inhalation	: Harmful if inhaled. May cause respiratory irritation.
Skin contact	: Causes skin irritation. Defatting to the skin. May cause an allergic skin reaction.
Ingestion	: No known significant effects or critical hazards.
Over-exposure signs/sympto	ms
Eye contact	: Adverse symptoms may include the following: pain or irritation watering redness

Section 4. First aid measures

Inhalation	: Adverse symptoms may include the following: respiratory tract irritation coughing reduced fetal weight increase in fetal deaths skeletal malformations
Skin contact	: Adverse symptoms may include the following: irritation redness dryness cracking reduced fetal weight increase in fetal deaths skeletal malformations
Ingestion	: Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
Indication of immediate mee	dical attention and special treatment needed, if necessary
Notes to physician	 Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
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

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media	
Suitable extinguishing media	: Use dry chemical, CO ₂ , water spray (fog) or foam.
Unsuitable extinguishing media	: Do not use water jet.
Specific hazards arising from the chemical	: Flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. This material is toxic to aquatic life. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

thoroughly with water before removing it, or wear gloves.

Section 5. Fire-fighting measures

Hazardous thermal decomposition products	: Decomposition products may include the following materials: carbon oxides halogenated compounds metal oxide/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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
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

contractor.

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. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing 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".
·		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). Water polluting material. May be harmful to the environment if released in large quantities.
Methods and materials for containment and cleaning up		
Small spill	:	Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. 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

Large spill	: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. 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	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. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
Conditions for safe storage, : including any incompatibilities	Store between the following temperatures: 0 to 20°C (32 to 68°F). Store in accordance with local regulations. Store in a segregated and approved area. 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. Eliminate all ignition sources. Separate from oxidizing materials. 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. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name		Exposure limits
styrene		Ministry of Labor (Thailand, 8/2017). CEIL: 200 ppm STEL: 600 ppm, 3 times per shift, 5 minutes. TWA: 100 ppm 8 hours.
methyl methacrylate		Ministry of Labor (Thailand, 8/2017). TWA: 100 ppm 8 hours.
Recommended monitoring procedures	If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. 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. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.	
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Section 8. Exposure controls/personal protection

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 measu	<u>res</u>	
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 protection	1	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	1	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. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
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	: Various
Odor	: Aromatic.
Odor threshold	: Not available.
рН	: insoluble in water.
Melting point	: May start to solidify at the following temperature: -31°C (-23.8°F) This is based on data for the following ingredient: styrene. Weighted average: -32.82°C (-27.1°F)

Section 9. Physical and chemical properties

		· ·
Boiling point	:	>37.78°C (>100°F)
Flash point	:	Closed cup: 28°C (82.4°F)
Evaporation rate	:	0.536 (styrene) compared with butyl acetate
Flammability (solid, gas)	:	liquid
Lower and upper explosive (flammable) limits	:	Greatest known range: Lower: 1.7% Upper: 12.5% (methyl methacrylate)
Vapor pressure	:	Highest known value: 3.7 kPa (27.8 mm Hg) (at 20°C) (methyl methacrylate). Weighted average: 1.2 kPa (9 mm Hg) (at 20°C)
Vapor density	:	Highest known value: 3.6 (Air = 1) (styrene). Weighted average: 3.59 (Air = 1)
Relative density	:	1.19
Solubility	:	Insoluble in the following materials: cold water.
Partition coefficient: n- octanol/water	:	Not applicable.
Auto-ignition temperature	:	Lowest known value: 400°C (752°F) (methyl methacrylate).
Decomposition temperature	:	Stable under recommended storage and handling conditions (see Section 7).
Viscosity	:	Kinematic (40°C): >21 mm²/s

Section 10. Stability and reactivity

Continu 44 Taxia	lagical information
Hazardous decomposition products	 Depending on conditions, decomposition products may include the following materials: carbon oxides halogenated compounds metal oxide/oxides
Incompatible materials	: Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.
Conditions to avoid	: When exposed to high temperatures may produce hazardous decomposition products.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Chemical stability	: The product is stable.
Reactivity	: No specific test data related to reactivity available for this product or its ingredients.

Section 11. Toxicological information

Information on toxicological effects Acute toxicity

Section 11. Toxicological information

		Beault	Species	Deee	Exposure
Product/ingredient name		Result	Species	Dose	Exposure
styrene		LC50 Inhalation Vapor	Rat	11800 mg/m ³	
		LC50 Inhalation Vapor	Rat	2700 ppm	4 hours
		LD50 Dermal	Rat	>5000 mg/kg	-
methyl methacrylate		LD50 Oral LC50 Inhalation Vapor	Rat Rat	>5000 mg/kg 78000 mg/m³	- 4 hours
		LD50 Dermal	Rabbit	>5 g/kg	-
		LD50 Oral	Rat	7872 mg/kg	-
Conclusion/Summary	: There a	re no data available on the m	ixture itself.		<u> </u>
Irritation/Corrosion					
Conclusion/Summary					
Skin	: There a	re no data available on the m	ixture itself.		
Eyes	: There are no data available on the mixture itself.				
Respiratory	: There are no data available on the mixture itself.				
<u>Sensitization</u>					
Conclusion/Summary					
Skin	: There are no data available on the mixture itself.				
Respiratory	: There are no data available on the mixture itself.				
Mutagenicity					
Conclusion/Summary	: There a	re no data available on the m	ixture itself.		
Carcinogenicity					
Conclusion/Summary	: There a	re no data available on the m	ixture itself.		
Reproductive toxicity					
Conclusion/Summary	: There a	re no data available on the m	ixture itself.		
Teratogenicity					
Conclusion/Summary	: There a	re no data available on the m	ixture itself.		
Specific target organ toxic	<u>ity (single</u>	<u>exposure)</u>			

Name	Category	Route of exposure	Target organs
styrene	Category 3	-	Respiratory tract irritation
methyl methacrylate	Category 3		Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	•••	Route of exposure	Target organs
styrene	Category 1	-	hearing organs

Aspiration hazard

Name	Result
styrene	ASPIRATION HAZARD - Category 1

Section 11. Toxicological information

Information on the likely routes of exposure

: Not available.

Potential acute health effects

Eye contact	: Causes serious eye irritation.
Inhalation	: Harmful if inhaled. May cause respiratory irritation.
Skin contact	: Causes skin irritation. Defatting to the skin. May cause an allergic skin reaction.
Ingestion	: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	: Adverse symptoms may include the following: respiratory tract irritation coughing reduced fetal weight increase in fetal deaths skeletal malformations
Skin contact	: Adverse symptoms may include the following: irritation redness dryness cracking reduced fetal weight increase in fetal deaths skeletal malformations
Ingestion	: Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations

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

<u>Short term exposure</u>		
Potential immediate effects	: Not available.	
Potential delayed effects Long term exposure	: Not available.	
Potential immediate effects	: Not available.	
Potential delayed effects Potential chronic health effe		

Section 11. Toxicological information

General	: Causes damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. 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	: Suspected of damaging fertility or the unborn child.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Inhalation (vapors)	14.63 mg/l
Inhalation (dusts and mists)	1.86 mg/l

Other information

Prolonged or repeated contact may dry skin and cause irritation. 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. Avoid contact with skin and clothing.

Section 12. Ecological information

Toxicity

•	Exposure
Algae Fish	96 hours 96 hours
mg/l mg/l	mg/l Fish

Conclusion/Summary

: There are no data available on the mixture itself.

Persistence/degradability

Product/ingredient name	Test	Result		Dose	Inoculum
styrene	-	70.9 % - 28 days		-	-
Conclusion/Summary : There are no data available on the mixture itself.					
Product/ingredient name	Aquatic half-life		Photolysis	S	Biodegradability
styrene	-		-		Readily

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
styrene	2.95		low
methyl methacrylate	1.38		low

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Section 12. Ecological information

Mobility in soil

Soil/water partition	;	Not available.
coefficient (Koc)		
Other adverse effects	1	No known significant effects or critical hazards.

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. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	UN	IMDG	ΙΑΤΑ
UN number	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT
Transport hazard class(es)	3	3	3
Packing group	III	III	III
Environmental hazards	No.	No.	No.
Marine pollutant substances	Not applicable.	Not applicable.	Not applicable.

Additional information

UN	: None identified.
IMDG	: None identified.
ΙΑΤΑ	: 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 14. Transport information

Transport in bulk according : Not applicable. to IMO instruments

Section 15. Regulatory information

Harmful Chemicals List

: Listed

Safety, health and environmental regulations specific for the product

: No known specific national and/or regional regulations applicable to this product (including its ingredients).

International regulations

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Section 16. Other information

<u>History</u>	
Date of issue/Date of revision	: 13 December 2021
Date of previous issue	: 5/19/2021
Version	: 2.02
Prepared by	: EHS
Key to abbreviations	 ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association 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) RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail UN = United Nations
Indicates information that	t has changed from previously issued version.

Indicates information that has changed from previously issued version.

Notice to reader

Section 16. Other information

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.