

SAFETY DATA SHEET

Date of issue/Date of revision 15 June 2022
Version 4.01



Section 1. Identification

Product code : 40840-GBHRD/4L
Product identifier : NOVAGUARD 840 HARDENER GREEN

Recommended use and restrictions

**Use of the substance/
mixture** : Coating.
Uses advised against : Not applicable.

Supplier's details : PPG Industries Australia Pty Limited
(ABN 82 055 500 939)
14-20 McNaughton Rd
CLAYTON Victoria 3168
Tel: (03) 9263 6000 Fax: (03) 9263 6970

**Emergency telephone
number** : Australia 1800 883 254 / New Zealand 0800 000 096
For international shipping emergencies: 1-412-391-1618

Section 2. Hazard(s) identification

**Classification of the
substance or mixture** : ACUTE TOXICITY (oral) - Category 4
ACUTE TOXICITY (dermal) - Category 3
ACUTE TOXICITY (inhalation) - Category 3
SKIN CORROSION/IRRITATION - Category 1A
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
SKIN SENSITISATION - Category 1

GHS label elements

Hazard pictograms :



Signal word : **DANGER**

Hazard statements : **Harmful if swallowed.**
Toxic in contact with skin or if inhaled.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.

Precautionary statements

Prevention : **W**ear protective gloves, protective clothing and eye or face protection. Avoid breathing vapour. Wash thoroughly after handling.

Response : **I**F INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor. **I**F SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. **I**F 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. **I**F 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. **I**F IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a

Section 2. Hazard(s) identification

POISON CENTER or doctor.

- Storage** : Not applicable.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Supplemental label elements** : Not applicable.

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

Section 3. Composition and ingredient information

Substance/mixture : Mixture

CAS number/other identifiers

- CAS number** : Not applicable.
- EC number** : Mixture.

Ingredient name	CAS number	% (w/w)
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	6864-37-5	>60
benzyl alcohol	100-51-6	10 - <30
N-(3-(trimethoxysilyl)propyl)ethylenediamine	1760-24-3	1 - <10
2,4,6-tris(dimethylaminomethyl)phenol	90-72-2	1 - <10

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 or have an OEL 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** : 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 recognised skin cleanser. Do NOT use solvents or thinners.
- Ingestion** : If swallowed, seek medical advice immediately and show the 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** : Toxic if inhaled.
- Skin contact** : Causes severe burns. Toxic in contact with skin. May cause an allergic skin reaction.
- Ingestion** : Harmful if swallowed.

Over-exposure signs/symptoms

Section 4. First aid measures

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
- Ingestion** : Adverse symptoms may include the following:
stomach pains

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. Firefighting 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
metal oxide/oxides
Formaldehyde.
- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Hazchem code** : Not applicable.

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 spill material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised 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 spilt 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 material 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 the 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 spilt 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. Do not get in eyes or on skin or clothing. Do not breathe vapour 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.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : Store between the following temperatures: 0 to 35°C (32 to 95°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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

Control parameters

Occupational exposure limits

benzyl alcohol

DFG MAC-values list (Germany, 10/2021). Absorbed through skin.

PEAK: 44 mg/m³, 4 times per shift, 15 minutes.

PEAK: 10 ppm, 4 times per shift, 15 minutes.

TWA: 22 mg/m³ 8 hours.

TWA: 5 ppm 8 hours.

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.

For products that are sprayed, where practicable use a spray booth designed and maintained in accordance with AS/NZS 4114.

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

Individual protection measures

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

Eye/face protection : Chemical splash goggles and face shield.

Skin protection

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

Gloves : nitrile neoprene

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 and 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** : 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.
- Restrictions on use** : Not applicable.

References: Eye protectors should conform to AS/NZS 1336 and AS/NZS 1337. Chemical-resistant gloves should conform to AS/NZS 2161.1. Respiratory protection should conform to AS/NZS 1715 and AS/NZS 1716. Occupational footwear should conform to AS/NZS 2210.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid.
- Colour** : Green.
- Odour** : Amine-like.
- Odour threshold** : Not available.
- pH** : Not applicable.
- Melting point** : Not available.
- Boiling point** : >37.78°C (>100°F)
- Flash point** : Closed cup: Not applicable.
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapour pressure** : Not available.
- Vapour density** : Not available.
- Relative density** : 0.97
- Solubility** : Insoluble in the following materials: cold water.
- Partition coefficient: n-octanol/water** : Not applicable.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Viscosity** : 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.

Section 10. Stability and reactivity

Conditions to avoid : Stable under recommended storage and handling conditions (see Section 7). When exposed to high temperatures may produce hazardous decomposition products.

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

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

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2,2'-dimethyl-4,4'-methylenebis (cyclohexylamine)	LC50 Inhalation Dusts and mists	Rat	420 mg/m ³	4 hours
benzyl alcohol	LD50 Dermal	Rabbit	>0.2 g/kg	-
	LD50 Oral	Rat	>0.32 g/kg	-
N-(3-(trimethoxysilyl)propyl) ethylenediamine	LC50 Inhalation Dusts and mists	Rat	>4178 mg/m ³	4 hours
	LD50 Dermal	Rabbit	2000 mg/kg	-
2,4,6-tris (dimethylaminomethyl) phenol	LD50 Oral	Rat	1.23 g/kg	-
	LD50 Oral	Rat	2413 mg/kg	-
	LD50 Dermal	Rabbit	1.28 g/kg	-
	LD50 Dermal	Rat	1280 mg/kg	-
	LD50 Oral	Rat	1200 mg/kg	-

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

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
2,4,6-tris (dimethylaminomethyl) phenol	Skin - Visible necrosis	Rabbit	-	4 hours	7 days

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.

Sensitisation

Not available.

Conclusion/Summary

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

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

Mutagenicity

Not available.

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

Carcinogenicity

Not available.

Section 11. Toxicological information

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

Reproductive toxicity

Not available.

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

Teratogenicity

Not available.

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

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : Toxic if inhaled.

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

Ingestion : Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

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

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Ingestion : Adverse symptoms may include the following:
stomach pains

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Conclusion/Summary : There are no data available on the mixture itself. Trimethoxysilanes are capable of forming methanol if hydrolyzed or ingested. If swallowed, methanol may be harmful or fatal or cause blindness. This product either contains formaldehyde or is capable of releasing formaldehyde above 0.5 ppm under certain conditions. Formaldehyde is a known cancer hazard, a skin sensitizer and a respiratory sensitizer. Exposure to component solvent vapour 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.

Section 11. Toxicological information

Solvents may cause some of the above effects by absorption through the skin. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Short term exposure

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

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

Long term exposure

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

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

Potential chronic health effects

Not available.

General : 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 : 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 (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
NOVAGUARD 840 HARDENER GREEN	583	365.4	N/A	317.5	0.6
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	500	300	N/A	N/A	0.5
benzyl alcohol	1230	2000	N/A	N/A	1.5
N-(3-(trimethoxysilyl)propyl)ethylenediamine	2413	N/A	N/A	11	N/A
2,4,6-tris(dimethylaminomethyl)phenol	1200	1280	N/A	N/A	N/A

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
2,4,6-tris(dimethylaminomethyl)phenol	Acute LC50 175 mg/l	Fish	96 hours

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
benzyl alcohol	-	-	Readily

Section 12. Ecological information

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
2,2'-dimethyl-4,4'-methylenebis (cyclohexylamine)	1.8	-	low
benzyl alcohol	0.87	-	low
2,4,6-tris (dimethylaminomethyl)phenol	0.219	-	low

Mobility in soil


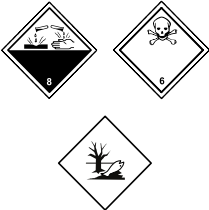

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimised 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 spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	ADG	IMDG	IATA
UN number	UN2922	UN2922	UN2922
UN proper shipping name	CORROSIVE LIQUID, TOXIC, N.O.S. (2,2'-dimethyl-4,4'-methylenebis (cyclohexylamine), 2,4,6-tris (dimethylaminomethyl) phenol)	CORROSIVE LIQUID, TOXIC, N.O.S. (2,2'-dimethyl-4,4'-methylenebis (cyclohexylamine), 2,4,6-tris (dimethylaminomethyl) phenol)	CORROSIVE LIQUID, TOXIC, N.O.S. (2,2'-dimethyl-4,4'-methylenebis (cyclohexylamine), 2,4,6-tris (dimethylaminomethyl) phenol)
Transport hazard class (es)	8 (6.1) 	8 (6.1) 	8 (6.1) 
Packing group	II	II	II

Section 14. Transport information

Environmental hazards	Yes. The environmentally hazardous substance mark is not required.	Yes.	Yes. The environmentally hazardous substance mark is not required.
Marine pollutant substances	Not applicable.	(2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine))	Not applicable.

Additional information

ADG : None identified.

Hazchem code : Not applicable.

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.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

SUSMP : Not scheduled

Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

Australia inventory (AIIC) : All components are listed or exempted.

New Zealand (NZIoC) : All components are listed or exempted.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of issue/Date of revision : 15 June 2022

Date of previous issue : 10/8/2021

Prepared by : EHS

Key to abbreviations : ADG = Australian Dangerous Goods
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)
NOHSC = National Occupational Health and Safety Commission
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

References : Not available.

✔ Indicates information that has changed from previously issued version.

Notice to reader

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.