

SAFETY DATA SHEET

Issue Date August 2017

Section 1: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

Product identifier

Product Name Norski Epoxy Resin

Description Colourless Liquid

Other means of identification

UN Number UN 3082

Recommended use of the chemical and restrictions on use Recommended Use

Construction of fibre reinforced equipment and fittings. Suitable for construction of recreational water craft. Corrosion resistant flooring and coatings.

Details of the supplier of the safety data sheet

Manufacturer

Norski Holdings Ltd
10 Northpoint Street
Plimmerton
Wellington 5247
New Zealand

For further information, please contact

Contact Point

Norski Holdings Ltd
+64 (04) 233 6184

E-mail address

Enquiries@norski.co.nz

Emergency telephone number

Emergency Telephone

0800 500 341

Section 2: HAZARD(S) IDENTIFICATION

Regulatory information

EPA New Zealand HSNO approval code or group standard

Surface Coatings and Colourants (Subsidiary Hazard) Group Standard 2006
HSR 002670

Dangerous Goods Class 9 PG III

Label elements



Signal Word "WARNING"

HSNO Classification

- 6.1D Acutely toxic (oral, dermal, inhalation)
- 6.3A Irritating to the skin
- 6.4A Irritating to the eyes
- 6.5B Contact sensitisers
- 9.1B Very ecotoxic in the aquatic environment

GHS Classification

Acute toxicity: Skin	Category 4
Acute toxicity: Oral	Category 4
Acute toxicity Inhalation	Category 4
Skin corrosion/ Irritation	Category 2
Serious eye damage /eye irritation	Category 2A
Skin sensitisation	Category 1
Aquatic toxicity (Chronic)	Category 2

Hazard statements

- H302 Harmful if swallowed.
- H312 Harmful in contact with skin.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

- P261 Do not breathe mist/vapours/spray.
- P264 Wash hands thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P272 Contaminated work clothing should not be allowed out of the workplace.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response

P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
 P330 Rinse mouth.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
 P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
 P304 + P340 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
 P305 + P351 + IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present
 P338 and easy to do. Continue rinsing.
 P337 + P313 If eye irritation persists: Get medical advice/attention.
 P312 Call a POISON CENTER or doctor/physician if you feel unwell.
 P321 Specific treatment (see First Aid Measures below)
 P363 Wash contaminated clothing before reuse.
 P391 Collect spillage

Storage

No storage statements

Disposal

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Storage No storage statements

Disposal

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 3: COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical Name	CAS no.	Weight %
Bisphenol A/ epichlorohydrin resin	25085-99-8	50-70
Formaldehyde, polymer with (chloromethyl)oxirane and phenol	9003-36-5	10-30
Benzyl alcohol	100-51-6	10-30
Other ingredients determined not to be hazardous		To 100

Section 4: FIRST AID MEASURES

Inhalation Remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if not breathing. Get medical attention.

Skin Contact Remove contaminated clothing/shoes and wipe excess from skin. Flush skin with water. Follow by washing with soap and water. If irritation occurs, get medical attention. Do not reuse clothing until cleaned. Contaminated leather articles, including shoes, cannot be decontaminated and should be destroyed to prevent reuse.

Eye contact Flush eyes with plenty of water for 15 minutes while holding eyelids open. Get medical attention.

Ingestion Do not induce vomiting. Rinse mouth with water. Give plenty of water to drink.

Treatment Treat symptomatically

Section 5: FIREFIGHTING MEASURES

Extinguishing Media	Use water fog, foam, dry chemical or carbon dioxide.
Extinguishing Media to Avoid	Do not use direct water stream. May spread fire
Hazardous Combustion Products	During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Phenolics. Carbon monoxide. Carbon dioxide.
Unusual Fire and Explosion Hazards	Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Dense smoke is emitted when burned without sufficient oxygen.
Fire Fighting Procedures	Clear fire area of all non-emergency personnel. Isolate fire and deny unnecessary entry. Cool fire exposed containers with water. Irritating fumes are released in fire situations. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Do not allow material or run-off to enter waterways. Stay upwind, keep out of low areas.
Fire-fighting equipment	Wear positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during firefighting operations. If contact is likely, change to full chemical resistant firefighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location
HAZCHEM	3Z

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

General Precautions	Isolate area. Keep unnecessary and unprotected personnel from entering the area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Refer to Section 7, Handling, for additional precautionary measures.
Personal Precautions	Use cautious judgement when cleaning up spills. Shut off leaks, if possible without personal risk.
Environmental Precautions	Dike and Contain. Contain run-off and dispose of properly. Remove contaminated soil to remove contaminated trace residues. Prevent from entering into drains, ditches or rivers.
Clean-up Methods (small)	Soak up with an absorbent material such as clay, sand, sawdust or Zorball. Place in non-leaking container. Seal tightly for proper disposal.
Clean-up Methods (large)	Remove with vacuum trucks or pump to storage/salvage vessels. Soak up residue with an absorbent material such as clay, sand, sawdust or Zorball. Place in non-leaking container. Seal tightly for proper disposal. Flush are with water to remove trace residue.

Section 7: HANDLING AND STORAGE

Handling	Keep out of reach of children. Put on appropriate PPE (see section 8). Causes skin irritation and sensitivity. Avoid contact with skin, eyes and clothing. Wash with soap and water before eating, drinking, smoking, applying cosmetics, or using toilet facilities. Do not breathe vapour or mist. Clean up spilled material immediately, and wash clothes, equipment and work area after use.
Storage	Store in a cool, dry place with adequate ventilation. Keep containers closed when not in use.

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Workplace Exposure Standards	None established
Engineering controls	Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or engineering controls to keep worker exposure to airborne contaminants as low as possible and/or below any recommended or statutory limits. Use explosion-proof ventilation equipment.
Personal Respiratory Protection	Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

Skin - 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.

Eye - Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Hand - Recommended: polyvinyl alcohol (PVA), Butyl rubber, EVAL, Neoprene

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Liquid
Colour	Colourless
Odour	Sweet odour
pH	≈ 5
Vapour pressure	82 Pa (4.5 mm Hg)
Vapour density	>1 [Air = 1]
Boiling Point	Not available
Melting/Freezing Point	Not available
Solubility (water)	Not Miscible
Specific Gravity/Density	1.16 g/cm ³ [25°C (77°F)]
Flash Point	251°C (closed cup)
Flammable Limits	LFL: Not available UFL: Not available
Auto-ignition	>300°C

Section 10: STABILITY AND REACTIVITY

Chemical Stability	Stable under recommended storage conditions.
Conditions to avoid	Avoid temperatures above 300°C. Potentially violent decomposition can occur, causing gas generation and pressure increases in closed systems.
Materials to	Reactive or incompatible with the following materials: <i>oxidizing materials</i>



EPOXIES • RESINS • GLUES • FILLERS

avoid Slightly reactive or incompatible with the following materials: acids, amines, anhydrides, chloroform, chloroform acid.
Hazardous Decomposition products may include the following materials: carbon oxides, phenolics and
Decomposition water.

Section 11: TOXICOLOGICAL INFORMATION

Potential Health effects
Inhalation Vapours are unlikely due to physical properties.
Ingestion Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.
Skin Prolonged or repeated contact may cause skin irritation.
Eye May cause eye irritation. Corneal injury is unlikely.

Acute Health Effects
(Bisphenol A/ epichlorohydrin resin)

Table with 4 columns: Test, Species, Result, Exposure. Rows include LD50 Oral (Rat) and LD50 Dermal (Rabbit).

Systemic Effects

Except for Skin sensitization, repeated exposure is not likely to cause significant adverse effects.

Carcinogenicity

IARC has classified DGEBA as non-carcinogenic.

Mutagenicity

In animal studies, did not cause birth defects or other adverse effects on the foetus when pregnant rabbits, did not interfere with reproduction. Animal genetic toxicity studies were negative

Section 12: ECOLOGICAL INFORMATION

(Bisphenol A/ epichlorohydrin resin)

Ecotoxicity Material is moderately toxic to aquatic organisms on an acute basis

Table with 4 columns: Species, Period, Result. Rows include LC50 (fathead minnow), EC50 (water flea), and IC50 (bacteria).

Degradability Under OECD guidelines this material cannot be considered as readily degradable.

Bioaccumulation Moderate Log Pow = 3 - 5

HSNO

Classification 9.1B Very ecotoxic in the Aquatic Environment

Section 13: DISPOSAL CONSIDERATIONS



Disposal

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations.

FOR UNUSED AND UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted recycler, reclaimer, incinerator or other destruction device.

Section 14: TRANSPORT INFORMATION

Road Sea and Air Transport

UN Number	UN3082
Proper Shipping name	Environmentally hazardous substance, liquid, n.o.s. (Epoxy resin mixture)
DG Class	9
Packing Group	III
HAZCHEM code	3Z
IMO/IMDG class	9
ICAO/IATA class	9
EMS code	F – A, S – F
Marine pollutant	Yes

Section 15: REGULATORY INFORMATION

Surface Coatings and Colourants (Subsidiary Hazard) Group Standard 2006
HSR 002670

Section 16: ANY OTHER RELEVANT INFORMATION

Revision Date 1 October 2017

If you want additional information

Norski Holdings Ltd

+64 (04) 233 6184

Disclaimer

This information is given without any warranty or representation. We do not assume any legal responsibility for same, nor do we give permission, inducement, or recommendation to practice any patented invention without a license. It is offered solely for your consideration, investigation, and verification. Before using any product, read its label.

End of Safety Data Sheet

SAFETY DATA SHEET

Issue Date August 2017

Section 1: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

Product identifier

Product Name Norski 421Epoxy Hardener

Description AMBER LIQUID

Other means of identification

UN Number 2735

Recommended use of the chemical and restrictions on use

Recommended Use

Construction of fibre reinforced equipment and fittings. Suitable for construction of recreational water craft. Corrosion resistant flooring and coatings.

Details of the supplier of the safety data sheet

Manufacturer

Norski Holdings Ltd
10 Northpoint Street
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0800 500 341

Section 2: HAZARD(S) IDENTIFICATION

Regulatory information

EPA New Zealand HSNO approval code or group standard

Surface Coatings and Colourants (Toxic [6.1], Corrosive) Group Standard 2006
HSR 002677

Dangerous Goods Class 8 PG III

Label elements



HSNO Classification

- 6.1C (dermal) Acutely toxic
- 6.1C (oral) Acutely toxic
- 6.1C Inhalation
- 6.5B (contact) Contact sensitisers
- 6.8B Suspected human reproductive or developmental toxicants
- 6.9A Toxic to human target organs or systems
- 8.2C Corrosive to dermal tissue
- 8.3A Corrosive to ocular tissue
- 9.1B (algal) Very ecotoxic in the aquatic environment
- 9.1C (crustacean) Harmful in the aquatic environment
- 9.3B Ecotoxic to terrestrial vertebrates

GHS Classification

Acute toxicity: Oral	Category 3
Acute toxicity: Skin	Category 3
Acute Toxicity Inhalation	Category 3
Skin sensitization	Category 1
Reproductive toxicity	Category 2
Specific Target Organ Systemic	Category 1
Skin corrosion/irritation	Category 1C
Serious eye damage/ eye irritation	Category 1
Aquatic toxicity Chronic	Category 2

Ecotoxic to terrestrial vertebrates

Hazard statements

- H301 Toxic if swallowed.
- H311 Toxic in contact with skin.
- H314 Causes severe skin burns and eye damage.
- H317 May cause an allergic skin reaction.
- H331 Toxic If Inhaled
- H361 Suspected of damaging fertility or the unborn child
- H373 Causes damage to organs through prolonged or repeated exposure
- H411 Toxic to aquatic life with long lasting effects.
- H432 Toxic to terrestrial vertebrates.

Precautionary statements

Prevention

- P202 Do not handle until all safety precautions have been read and understood.
 P261 Avoid breathing vapours
 P264 Wash hands thoroughly after handling
 P270 Do not eat, drink or smoke when using this product
 P272 Contaminated work clothing should not be allowed out of the workplace.
 P273 Avoid release to the environment
 P280 Wear protective gloves, protective clothing, eye protection and face protection

Response

- P30+ P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 P303 P361 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing.
 P353 Rinse skin with water/shower.
 P304+ P340 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
 P305 + P351 P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 PP312 Call a POISON CENTER or doctor/physician if you feel unwell.
 P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
 P361 Remove/Take off immediately all contaminated clothing.
 P363 Wash contaminated clothing before reuse.
 P391 Collect spillage.

Storage

- P405 Store locked up

Disposal

- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 3: COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical Name	CAS no.	Weight %
Isophoronediamine	2855-13-2	50-60
Teta, reaction products with phenol /formaldehyde	32610-77-8	20-30
Triethylenetetramine	112-24-3	5-10
Phenol	108-95-2	5-10
Other ingredients determined not to be hazardous		To 100



Section 4: FIRST AID MEASURES

Inhalation	Remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if not breathing. Get medical attention.
Skin	Remove contaminated clothing/shoes and wipe excess from skin. Flush skin with water. Follow Contac by washing with soap and water. If irritation occurs, get medical attention. Do not reuse clothing until cleaned. Contaminated leather articles, including shoes, cannot be decontaminated and should be destroyed to prevent reuse.
Eye contact	Flush eyes with plenty of water for 15 minutes while holding eyelids open. Get medical attention.
Ingestion	Do not induce vomiting. Rinse mouth with water. Give plenty of water to drink.
Treatment	Treat symptomatically

Section 5: FIREFIGHTING MEASURES

Extinguishing	Use water fog, foam, dry chemical or carbon dioxide.
Media	
Extinguishing	Do not use direct water stream. May spread fire
Media to	
Avoid	
Hazardous Products	In case of fire, the following hazardous smoke fumes may be produced: Carbon Oxides, Nitrous Combustion gases, ammonia.
Fire Fighting:-	Clear fire area of all non-emergency personnel. Isolate fire and deny unnecessary entry. Cool fire
Procedures:-	exposed containers with water. Irritating fumes are released in fire situations. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Do not allow material or run-off to enter waterways. Stay upwind, keep out of low areas.
Fire-fighting Equipment	Wear positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during firefighting operations. If contact is likely, change to full chemical resistant firefighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location
HAZCHEM	2X

Section 6: ACCIDENTAL RELEASE MEASURES

General	Isolate area. Keep unnecessary and unprotected personnel from entering the area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure
Precautions	Controls and Personal Protection. Refer to Section 7, Handling, for additional precautionary measures.
Personal Precautions	Use cautious judgement when cleaning up spills. Shut off leaks, if possible without personal risk.
Environ Mental Precautions	Dike and Contain. Contain run-off and dispose of properly. Remove contaminated soil to remove contaminated trace residues. Prevent from entering into drains, ditches or rivers.
Clean-up Methods (small)	Soak up with an absorbent material such as clay, sand, sawdust or Zorball. Place in non-leaking
Clean-up	container. Seal tightly for proper disposal.
Methods (large)	Remove with vacuum trucks or pump to storage/salvage vessels. Soak up residue with an absorbent material such as clay, sand, sawdust or Zorball. Place in non-leaking container. Seal
	tightly for proper disposal. Flush are with water to remove trace residue.

Section 7: HANDLING AND STORAGE

Handling	Keep out of reach of children. Put on appropriate PPE (see section 8). Causes skin irritation and sensitivity. Avoid contact with skin, eyes and clothing. Wash with soap and water before eating, drinking, smoking, applying cosmetics, or using toilet facilities. Do not breathe vapour or mist. Clean up spilled material immediately, and wash clothes, equipment and work area after use.
Storage	Store in a cool, dry place with adequate ventilation. Keep containers closed when not in use.

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Workplace Exposure Standards	None established
Engineering	Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other controls

engineering controls to keep worker exposure to airborne contaminants as low as possible and/or below any recommended or statutory limits. Use explosion-proof ventilation equipment.

Personal **Respiratory** - Use a properly fitted, air-purifying or air-fed respirator complying with an approved Protection standard if a risk assessment indicates this is necessary.

Skin - 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.

Eye - Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Hand - Recommended: polyvinyl alcohol (PVA), Butyl rubber, EVAL, Neoprene

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Liquid
Colour	Amber
Odour	Sweet odour
pH	Not available
Vapour pressure	82 Pa (4.5 mm Hg)
Vapour density	0.0157 hPa at 20 °C
Boiling Point	Not available
Melting/Freezing Point	Not available
Solubility (water)	Soluble
Specific Gravity/Density	0.98g/cm ³ [25°C (77°F)]
Flash Point	110°C (closed cup)
Flammable Limits	LFL: Not available UFL: Not available
Auto-ignition	>300°C

Section 10: STABILITY AND REACTIVITY

Chemical Stability	Stable under recommended storage conditions.
Conditions to avoid	Avoid temperatures above 300°C. Potentially violent decomposition can occur, causing gas generation and pressure increases in closed systems.
Materials to avoid	Reactive or incompatible with the following materials: oxidizing materials. Slightly reactive or incompatible with the following materials: acids and alkalis.
Hazardous Decomposition Products	Decomposition products may include the following materials: carbon oxides, phenolics and water.

Section 11: TOXICOLOGICAL INFORMATION

Potential Health effects	
Inhalation	No data is available on the product itself.
Ingestion	No data is available on the product itself.
Skin	Moderate skin irritation
Eye	Severe eye irritation.

Acute Health Effects (Isophoronediamine)

Test	Species	Result	Exposure
LD50 Oral	Rat	1,030 mg/kg	-
LC50 Inhalation	Rat	> 5.01 mg/l	4 h
LD50 Dermal	Rat	> 2,000 mg/kg	-

Systemic Impacts

This product is a HSNO 6.1C Toxic if inhaled, swallowed and on skin and HSNO 6.9A Toxic to Human Body Systems. It is also a HSNO 6.5B Skin Sensitiser.

Carcinogenicity Mutagenicity

No Data is available.

Section 12: ECOLOGICAL INFORMATION



(Isophoronediamine)

Ecotoxicity Material is toxic to aquatic organisms on an acute basis

Species	Period	Result
LC50	Golden orfe	96 h 110 mg/l
EC50	water flea	48 h 23 mg/l
EC50	green algae	72 h 37 mg/l

EC10 Pseudomonas putida 18 h 1,120 mg/l

Degradability	Under OECD guidelines this material cannot be considered as readily degradable.
Bioaccumulation	Moderate
	Log P _{ow} = 0.99 at 23 °C
HSNO Classification	9.1B (algal) Very ecotoxic in the aquatic environment
	9.1C (crustacean) Harmful in the aquatic environment
	9.3B Ecotoxic to terrestrial vertebrates

Section 13: DISPOSAL CONSIDERATIONS

Disposal

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations.

FOR UNUSED AND UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted recycler, reclaimer, incinerator or other destruction device.

Section 14: TRANSPORT INFORMATION

Road, Rail, Sea and Air Transport

UN Number	2735
Proper Shipping	
Name	Polyamines, liquid, corrosive, n.o.s. (mixture contains isophoronediamine)
DG Class	8
Packing Group	III
HAZCHEM code	2X
IMO/IMDG class	8
ICAO/IATA class	8
EMS code	F – A, S – B
Marine pollutant	Yes

Section 15: REGULATORY INFORMATION

Surface Coatings and Colourants (Toxic [6.1], Corrosive) Group Standard 2006
HSR 002677

This Group Standard is appropriate due to the 6.1C Classifications. Currently any product requires a HSNO Approved Handler at any quantity until after 1 December 2017 when the Person in Charge of a Business Unit will be responsible for Training.

Section 16: ANY OTHER RELEVANT INFORMATION

None



Disclaimer

This information is given without any warranty or representation. We do not assume any legal responsibility for same, nor do we give permission, inducement, or recommendation to practice any patented invention without a license. It is offered solely for your consideration, investigation, and verification. Before using any product, read its label.

End of Safety Data Sheet