



SAFETY DATA SHEET

SDS Number: SDS/OTH-0027

Version No: 003

1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Name:	NIPPON PAINT FLOORSHIELD 811 VAPOUR BARRIER (PART A)
Intended Use:	Part A of a Two-component Water-based Epoxy for Floor Application
Distributed:	Nippon Paint (S) Co. Pte Ltd No. 1 First Lok Yang Road Jurong Singapore 629728
Emergency Phone Number:	(65) 6 265 5355
Fax Numbers:	(65) 6 264 1603

2. HAZARDS IDENTIFICATION

GHS Classification:

Physical Hazard

Not classified as an physical hazard under GHS criteria

Health Hazard

Skin irritation – Category 2

Skin sensitization – Category 1

Environment Hazard

Not classified as an environmental hazard under GHS criteria

GHS Pictogram



Signal Word

Warning

Hazard statements

H315 Causes skin irritation

H317 May cause an allergic skin reaction

Precautionary statements

P261 Avoid breathing fume/mist/vapours/spray.

P264 Wash hands and forearms thoroughly after handling.

P272 Contaminated work clothing should not be allowed out of the workplace.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P363 Take off contaminated clothing and wash before reuse.

Disposal

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

3. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Substances</u>	<u>CAS No.</u>	<u>%</u>
Polyamide resin	Proprietary	10 – 30%
Triethylenetetramine	112-24-3	1 – 2%

4. FIRST-AID MEASURES

INHALATION

- Move person to fresh air and call for medical assistance immediately.
- If not breathing, give artificial respiration, if breathing is difficult, give oxygen. Keep at rest.

SKIN CONTACT

- In case of contact, immediately flush skin with large amounts of water and soap while removing contaminated clothing and shoes.
- If irritation persists, get medical attention.

EYE CONTACT

- Immediately flush eyes with large amounts of water until irritation subsides.
- Remove contact lens
- Obtain medical attention, preferably by an ophthalmologist, immediately.

INGESTION

- DO NOT induce vomiting unless directed to do so by a medical personnel. Never give anything by mouth to an unconscious person. Keep at rest. Get medical attention immediately.

5. FIRE FIGHTING MEASURES

SUITABLE FIRE EXTINGUISHING MEDIA

- Alcohol-resistant foam, Carbon dioxide, or dry chemical type

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL

- Combustion products may include and are not limited to: Carbon monoxide and Carbon dioxide.

SPECIAL PROTECTIVE ACTIONS FOR FIRE FIGHTERS

- Wear full protective clothing and NIOSH-approved self-contained breathing apparatus.
- Use water spray to cool fire-exposed surfaces and to protect personnel. If a leak or spill has not ignited, use water spray to disperse the vapours.
- If possible, isolate product from heat, electrical equipments, sparks and open flames.
- Avoid spraying water directly into storage containers.
- Closed containers may explode when exposed to extreme heat.
- Avoid spreading burning liquid with water, isolate liquid.
- Do not allow run-off from fire fighting to enter drains or watercourses.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURE

- Wear appropriate protective equipment, e.g. respirators, eye protection, gloves and safety shoes.
- Avoid substance contact with eyes. Do not inhale vapours.

- Ensure supply of fresh air in enclosed rooms.

ENVIRONMENTAL PRECAUTIONS

- Eliminate sources of ignition.
- Keep public away.
- Contain spilled liquid with sand or other non-combustible absorbent materials
- Wash area and prevent runoff into drains and sewerage system.
- Advise authorities if substance has entered a watercourse or sewer or has contaminated soil or vegetation.

METHODS AND MATERIALS FOR CONTAINMENTS AND CLEANING UP

- Clean up all spills immediately.
- Absorb spill with absorbent and inert material, then place in container.
- Disposal in accordance to local/national regulations.

7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING

- Use appropriate personal protective equipment
- Keep out of reach of children.
- Handle containers with care. Open slowly in order to control possible pressure release.
- Do not pressurize containers.
- Do not ingest. Do not breathe in gas/fumes/vapour. Avoid contact with skin and eyes.
- For personal protection, see section 8.
- Use only in areas from which all naked lights and other sources of ignition have been excluded.
- Take precautionary measures against static discharge
- Protect from frost and extremes of temperature.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

- Keep containers tightly closed.
- Containers that are opened should be properly resealed and kept upright to prevent leakage.
- Store in cool, dry and well-ventilated place at temperature between 20°C to 40°C away from heat and sources of ignition.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

CONTROL PARAMETERS/OCCUPATIONAL LIMITS

This product has a component which contains trace amounts of the following substance with its relevant occupational exposure limits:

For component: Triethylenetetramine, CAS No.: 112-24-3
ACGIH: TWA = 1 ppm / 4.2 mg/m³

APPROPRIATE ENGINEERING CONTROL MEASURES

- Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective occupational exposure limits.
- Ensure eyewash stations and safety showers are close to the workstation location.

PERSONAL PROTECTION

Respiratory Protection:	Use of NIOSH-approved respirators with organic vapour cartridges is recommended.
Hand Protection:	Use of solvent resistance type or chemical resistant type of protective gloves is recommended.
Eye Protection:	Use of safety glasses or goggles with side shields is recommended.
Skin / Body Protection:	Wear chemical resistant clothes and safety shoes when handling product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Liquid
Odour	:	Mild amine odour
Odour threshold	:	Not available
pH	:	9.5 – 10.5
Melting point/freezing point	:	Not available
Initial boiling point and boiling range	:	100 degC
Flash point	:	Non-flammable (water-based)
Evaporation rate	:	Not available
Flammability (solid, gas)	:	Not available
Lower flammability or explosive limit	:	Not available
Upper flammability or explosive limit	:	Not available
Vapour pressure	:	Not available
Vapour density	:	Not available
Relative density	:	Not available
Solubility	:	Partially miscible in water
Partition coefficient	:	Not available
Auto-ignition temperature	:	Not available
Decomposition temperature	:	Not available
Viscosity	:	Not available
Specific Gravity	:	Approx. 1.38

10. STABILITY AND REACTIVITY

REACTIVITY

- No dangerous reaction known under condition of normal use.

CHEMICAL STABILITY

- The product is stable under recommended storage and handling conditions. (see section 7)

POSSIBILITY OF HAZARDOUS REACTION

- Under normal conditions of storage and use, hazardous reaction will not occur.

CONDITIONS TO AVOID

- Keep away from oxidising agents, strongly alkaline and strongly acidic materials in order to avoid exothermic reactions. Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, drill, grind or expose containers to heat or sources of ignition.

HAZARDOUS DECOMPOSITION PRODUCTS

- When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, oxides of nitrogen and smoke.

11. TOXICOLOGICAL INFORMATION

This product has not been tested and all the toxicological statements have been derived from the respective components' available toxicity information.

Acute toxicity

Experimental/calculated data:

LD50, oral: > 5,000 mg/kg

LD50, dermal: > 5,000 mg/kg

LC50, inhalation: > 20 mg/L

Skin and Eye Irritation

This product may cause skin irritation due to the following component:

Triethylenetetramine, CAS No.: 112-24-3 – Skin Corrosive (Category 1)

Respiratory / Skin sensitization

The product's components may cause an allergic skin reaction. This product is not expected to cause allergy or asthma symptoms or breathing difficulties if accidentally inhaled.

Germ cell mutagenicity / Carcinogenicity / Reproductive toxicity / Developmental toxicity

Based on the assessment of available information, the product is: not mutagenic in bacteria; has no known carcinogenic effect; and not expected to cause reproductive and developmental toxicity.

Specific target organ toxicity (single and repeated exposure)

Based on the available information, there is no specific target organ toxicity expected after a single or repeated exposure to the product.

12. ECOLOGICAL INFORMATION

The following ecological assessment is based on the available ecotoxicity information of the product's components.

Ecotoxicity

Based on the ecological assessment of the product's components, this product is not expected to be toxic/harmful to aquatic life on both short-term and long-term duration.

Additional information

Do not release product untreated into natural waters. At the present knowledge of the product, no negative ecological effects are expected.

13. DISPOSAL CONSIDERATIONS

The product should not be allowed to enter drains and watercourses.

Preferred methods of waste disposal are incineration or biological treatment in federal/state approved facility. Empty containers should be recycled or disposed through an approved waste management facility or licensed contractor.

All federal, state and local environmental regulations shall be observed.

14. TRANSPORT INFORMATION

Transport to be in accordance with ADR/RID for road, IMDG for sea and IATA for Air.

LAND TRANSPORT

Not classified as Dangerous Goods by the criteria of the European Agreement concerning the international carriage of Dangerous Goods (ADR) by Road & Regulations concerning the international carriage of Dangerous goods (RID) by Rail.

SEA TRANSPORT

Not classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport of Sea.

SSEA (Annex II of MARPOL 73/78 and the IBC code)

Not applicable

AIR TRANSPORT

Not classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by Air

15. REGULATORY INFORMATION

Applicable national regulations:

- Standards on Hazard communication for hazardous chemicals and dangerous goods
 - SS 586 : Part 1: 2014- Transport and storage of dangerous goods
 - SS 586 : Part 2: 2014- GHS of classification and labelling of chemicals- Singapore's adaptations
 - SS 586 : Part 3: 2008- Preparation of safety data sheets (SDS)
- MOM: Workplace Safety and Health Act & Workplace Safety and Health (General Provisions) Regulations
 - This product is subject to SDS, labelling, PEL and other requirements in the Acts/Regulations
- NEA: Environmental Protection and Management Act & Environmental Protection and Management (Hazardous Substances) Regulations.
 - This product is not subject to control under this Acts/Regulations
- SCDF: Fire Safety Act & Fire Safety (Petroleum and Flammable Materials) Regulations
 - This product is subject to the requirement of this Acts/Regulations
- SPF: The Arms and Explosive Act, the Arms and Explosives (Explosives) Rules, and the Arms and Explosives (Explosive Precursors) Rules
 - This product is not subject to the requirement of this Acts/Regulations

16. OTHER INFORMATION

Revision date: 19-Dec-2016

Abbreviation

ACGIH American Conference of Governmental Industrial Hygienists

TLV Threshold limit value

TWA Time-Weighted Average

OSHA Occupational Safety and Health Administration

PEL Permissible Exposure Limit

LD50 Lethal Dose

LC50 Median lethal concentration

IACR International Agency for Research in Cancer

Disclaimer

To the best of our knowledge, the information contained herein is accurate. However, the information is provided without any representation or warranty, expressed or implied, regarding its accuracy or completeness. Since the conditions of handling, storage, use and disposal are beyond our control and may be beyond our knowledge, for this and other reasons, we make no guarantee of results and assume no liability for damages incurred by the use of this product. Please be reminded that all chemicals may present unknown health hazards and should be used with caution.



SAFETY DATA SHEET

SDS Number: SDS/OTH-0030

Version No: 003

1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Name:	NIPPON PAINT FLOORSHIELD 821 EPOXY RE-MORTAR (PART B)
Intended Use:	Part B of a Two-component Epoxy Resin Mortar for Floor Application
Distributed:	Nippon Paint (S) Co. Pte Ltd No. 1 First Lok Yang Road Jurong Singapore 629728
Emergency Phone Number:	(65) 6 265 5355
Fax Numbers:	(65) 6 264 1603

2. HAZARDS IDENTIFICATION

GHS Classification:

Physical Hazard

Not classified as an physical hazard under GHS criteria

Health Hazard

Skin Corrosion/Irritation – Category 1
Serious Eye Damage – Category 1

Environment Hazard

Chronic Aquatic Toxicity – Category 2

GHS Pictogram



Signal Word

Danger

Hazard statements

H314 Causes severe skin burns and eye damage
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

P260 Do not breathing fume/mist/vapours/spray.
P264 Wash hands and forearms thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response

P301+P330+P331 IF SWALLOWED: Rinse mouth, Do NOT induce vomiting.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304+P340 IF INHALED: Remove victim 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. Immediately call a poison center or doctor/physician.

P310 Immediately call a doctor/physician.

P391 Collect spillage.

Storage

P405 Store locked up.

Disposal

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

3. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Substances</u>	<u>CAS No.</u>	<u>%</u>
Tetraethylenepentamine	112-57-2	<i>Proprietary</i>

4. FIRST-AID MEASURES

INHALATION

- Move person to fresh air and call for medical assistance immediately.
- If not breathing, give artificial respiration, if breathing is difficult, give oxygen. Keep at rest.

SKIN CONTACT

- In case of contact, immediately flush skin with large amounts of water and soap while removing contaminated clothing and shoes.
- If irritation persists, get medical attention.

EYE CONTACT

- Immediately flush eyes with large amounts of water until irritation subsides.
- Remove contact lens
- Obtain medical attention, preferably by an ophthalmologist, immediately.

INGESTION

- DO NOT induce vomiting unless directed to do so by a medical personnel. Never give anything by mouth to an unconscious person. Keep at rest. Get medical attention immediately.

5. FIRE FIGHTING MEASURES

SUITABLE FIRE EXTINGUISHING MEDIA

- Alcohol-resistant foam, Carbon dioxide, or dry chemical type

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL

- Combustion products may include and are not limited to: Carbon monoxide and Carbon dioxide.

SPECIAL PROTECTIVE ACTIONS FOR FIRE FIGHTERS

- Wear full protective clothing and NIOSH-approved self-contained breathing apparatus.
- Use water spray to cool fire-exposed surfaces and to protect personnel. If a leak or spill has not ignited, use water spray to disperse the vapours.
- If possible, isolate product from heat, electrical equipments, sparks and open flames.
- Avoid spraying water directly into storage containers.
- Closed containers may explode when exposed to extreme heat.

- Avoid spreading burning liquid with water, isolate liquid.
- Do not allow run-off from fire fighting to enter drains or watercourses.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURE

- Wear appropriate protective equipment, e.g. respirators, eye protection, gloves and safety shoes.
- Avoid substance contact with eyes. Do not inhale vapours.
- Ensure supply of fresh air in enclosed rooms.

ENVIRONMENTAL PRECAUTIONS

- Eliminate sources of ignition.
- Keep public away.
- Contain spilled liquid with sand or other non-combustible absorbent materials
- Wash area and prevent runoff into drains and sewerage system.
- Advise authorities if substance has entered a watercourse or sewer or has contaminated soil or vegetation.

METHODS AND MATERIALS FOR CONTAINMENTS AND CLEANING UP

- Clean up all spills immediately.
- Absorb spill with absorbent and inert material, then place in container.
- Disposal in accordance to local/national regulations.

7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING

- Use appropriate personal protective equipment
- Keep out of reach of children.
- Handle containers with care. Open slowly in order to control possible pressure release.
- Do not pressurize containers.
- Do not ingest. Do not breathe in gas/fumes/vapour. Avoid contact with skin and eyes.
- For personal protection, see section 8.
- Use only in areas from which all naked lights and other sources of ignition have been excluded.
- Take precautionary measures against static discharge
- Protect from frost and extremes of temperature.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

- Keep containers tightly closed.
- Containers that are opened should be properly resealed and kept upright to prevent leakage.
- Store in cool, dry and well-ventilated place at temperature between 20°C to 40°C away from heat and sources of ignition.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

CONTROL PARAMETERS/OCCUPATIONAL LIMITS

This product has a component which contains trace amounts of the following substance with its relevant occupational exposure limits:

For component: Tetraethylenepentamine, CAS No.: 112-57-2

ACGIH: TWA = 1 ppm / 4.2 mg/m³

APPROPRIATE ENGINEERING CONTROL MEASURES

- Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective occupational exposure limits.
- Ensure eyewash stations and safety showers are close to the workstation location.

PERSONAL PROTECTION

Respiratory Protection:	Use of NIOSH-approved respirators with organic vapour cartridges is recommended.
Hand Protection:	Use of solvent resistance type or chemical resistant type of protective gloves is recommended.
Eye Protection:	Use of safety glasses or goggles with side shields is recommended.
Skin / Body Protection:	Wear chemical resistant clothes and safety shoes when handling product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Paste
Odour	:	Slight/ faint
Odour threshold	:	Not available
pH	:	Not available
Melting point/freezing point	:	Not available
Initial boiling point and boiling range	:	Not available
Flash point	:	>105 degC
Evaporation rate	:	Not available
Flammability (solid, gas)	:	Not available
Lower flammability or explosive limit	:	Not available
Upper flammability or explosive limit	:	Not available
Vapour pressure	:	Not available
Vapour density	:	Not available
Relative density	:	Not available
Solubility	:	Not soluble
Partition coefficient	:	Not available
Auto-ignition temperature	:	Not available
Decomposition temperature	:	Not available
Viscosity	:	Not available
Specific Gravity	:	1.82 – 1.92

10. STABILITY AND REACTIVITY

REACTIVITY

- No dangerous reaction known under condition of normal use.

CHEMICAL STABILITY

- The product is stable under recommended storage and handling conditions. (see section 7)

POSSIBILITY OF HAZARDOUS REACTION

- Under normal conditions of storage and use, hazardous reaction will not occur.

CONDITIONS TO AVOID

- Keep away from oxidising agents, strongly alkaline and strongly acidic materials in order to avoid exothermic reactions. Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, drill, grind or expose containers to heat or sources of ignition.

HAZARDOUS DECOMPOSITION PRODUCTS

- When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, oxides of nitrogen and smoke.

11. TOXICOLOGICAL INFORMATION

This product has not been tested and all the toxicological statements have been derived from the respective components' available toxicity information.

Acute toxicity

Experimental/calculated data:

LD50, oral: 3,700 mg/kg

LD50, dermal: 1,100 mg/kg

LC50, inhalation: > 20 mg/L

Skin and Eye Irritation

This product causes severe skin corrosion and serious eye damage due to the following components: Tetraethylenepentamine, CAS No.: 112-57-2 – Skin and Eye Corrosive (Category 1)

Respiratory / Skin sensitization

The product's components may cause an allergic skin reaction. This product is not expected to cause allergy or asthma symptoms or breathing difficulties if accidentally inhaled.

Germ cell mutagenicity / Carcinogenicity / Reproductive toxicity / Developmental toxicity

Based on the assessment of available information, the product is: not mutagenic in bacteria; has no known carcinogenic effect; and not expected to cause reproductive and developmental toxicity.

Specific target organ toxicity (single and repeated exposure)

Based on the available information, there is no specific target organ toxicity expected after a single or repeated exposure to the product.

12. ECOLOGICAL INFORMATION

The following ecological assessment is based on the available ecotoxicity information of the product's components.

Chronic toxicity to the aquatic environment

The product's major component is classified as Category 2 chronic aquatic toxicant. By estimation this product is considered toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

The product should not be allowed to enter drains and watercourses.

Preferred methods of waste disposal are incineration or biological treatment in federal/state approved facility. Empty containers should be recycled or disposed through an approved waste management facility or licensed contractor.

All federal, state and local environmental regulations shall be observed.

14. TRANSPORT INFORMATION

Transport to be in accordance with ADR/RID for road/rail, IMDG for sea and IATA for Air.

LAND TRANSPORT

Classified as Dangerous Goods by the criteria of the European Agreement concerning the international carriage of Dangerous Goods (ADR) by Road & Regulations concerning the international carriage of Dangerous goods (RID) by Rail.

UN Number: 2320
Proper shipping name: TETRAETHYLENEPENTAMINE
Class: Class 8
Packaging Group: III

SEA TRANSPORT

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport of Sea.

UN Number: 2320
Proper shipping name: TETRAETHYLENEPENTAMINE
Class: Class 8
Packaging Group: III
Marine Pollutant: No

SEA (Annex II of MARPOL 73/78 and the IBC code)

Not applicable

AIR TRANSPORT

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by Air

UN Number: 2320
Proper Shipping Name: TETRAETHYLENEPENTAMINE
Class: Class 8
Packaging Group: III

15. REGULATORY INFORMATION

Applicable national regulations:

- Standards on Hazard communication for hazardous chemicals and dangerous goods
 - SS 586 : Part 1: 2014- Transport and storage of dangerous goods
 - SS 586 : Part 2: 2014- GHS of classification and labelling of chemicals- Singapore's adaptations
 - SS 586 : Part 3: 2008- Preparation of safety data sheets (SDS)
 - MOM: Workplace Safety and Health Act & Workplace Safety and Health (General Provisions) Regulations
 - This product is subject to SDS, labelling, PEL and other requirements in the Acts/Regulations
 - NEA: Environmental Protection and Management Act & Environmental Protection and Management (Hazardous Substances) Regulations.
 - This product is not subject to control under this Acts/Regulations
 - SCDF: Fire Safety Act & Fire Safety (Petroleum and Flammable Materials) Regulations
 - This product is subject to the requirement of this Acts/Regulations
 - SPF: The Arms and Explosive Act, the Arms and Explosives (Explosives) Rules, and the Arms and Explosives (Explosive Precursors) Rules
 - This product is not subject to the requirement of this Acts/Regulations
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16. OTHER INFORMATION

Revision date: 19-Dec-2016

Abbreviation

ACGIH American Conference of Governmental Industrial Hygienists
TLV Threshold limit value
TWA Time-Weighted Average
OSHA Occupational Safety and Health Administration
PEL Permissible Exposure Limit
LD50 Lethal Dose
LC50 Median lethal concentration
IACR International Agency for Research in Cancer

Disclaimer

To the best of our knowledge, the information contained herein is accurate. However, the information is provided without any representation or warranty, expressed or implied, regarding its accuracy or completeness. Since the conditions of handling, storage, use and disposal are beyond our control and may be beyond our knowledge, for this and other reasons, we make no guarantee of results and assume no liability for damages incurred by the use of this product. Please be reminded that all chemicals may present unknown health hazards and should be used with caution.



SAFETY DATA SHEET

SDS Number: SDS/OTH-0028

Version No: 003

1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Name:	NIPPON PAINT FLOORSHIELD 811 VAPOUR BARRIER (PART B)
Intended Use:	Part B of a Two-component Water-based Epoxy for Floor Application
Distributed:	Nippon Paint (S) Co. Pte Ltd No. 1 First Lok Yang Road Jurong Singapore 629728
Emergency Phone Number:	(65) 6 265 5355
Fax Numbers:	(65) 6 264 1603

2. HAZARDS IDENTIFICATION

GHS Classification:

Physical Hazard

Not classified as an physical hazard under GHS criteria

Health Hazard

Skin irritation – Category 2

Eye irritation – Category 2

Skin sensitization – Category 1

Environment Hazard

Chronic aquatic toxicity – Category 2

GHS Pictogram



Signal Word

Warning

Hazard statements

H315 Causes skin irritation

H319 Causes serious eye irritation

H317 May cause an allergic skin reaction

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

P261 Avoid breathing fume/mist/vapours/spray.

P264 Wash hands and forearms thoroughly after handling.

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

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P363 Take off contaminated clothing and wash before reuse.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.

P337+P313 If eye irritation persists: Get medical advice/attention.

P391 Collect spillage.

Disposal

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

3. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Substances</u>	<u>CAS No.</u>	<u>%</u>
Bisphenol A / epichlorohydrin resin	25068-38-6 25085-99-8	10 – 30%

4. FIRST-AID MEASURES

INHALATION

- Move person to fresh air and call for medical assistance immediately.
- If not breathing, give artificial respiration, if breathing is difficult, give oxygen. Keep at rest.

SKIN CONTACT

- In case of contact, immediately flush skin with large amounts of water and soap while removing contaminated clothing and shoes.
- If irritation persists, get medical attention.

EYE CONTACT

- Immediately flush eyes with large amounts of water until irritation subsides.
- Remove contact lens
- Obtain medical attention, preferably by an ophthalmologist, immediately.

INGESTION

- DO NOT induce vomiting unless directed to do so by a medical personnel. Never give anything by mouth to an unconscious person. Keep at rest. Get medical attention immediately.

5. FIRE FIGHTING MEASURES

SUITABLE FIRE EXTINGUISHING MEDIA

- Alcohol-resistant foam, Carbon dioxide, or dry chemical type

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL

- Combustion products may include and are not limited to: Carbon monoxide and Carbon dioxide.

SPECIAL PROTECTIVE ACTIONS FOR FIRE FIGHTERS

- Wear full protective clothing and NIOSH-approved self-contained breathing apparatus.
- Use water spray to cool fire-exposed surfaces and to protect personnel. If a leak or spill has not ignited, use water spray to disperse the vapours.
- If possible, isolate product from heat, electrical equipments, sparks and open flames.
- Avoid spraying water directly into storage containers.
- Closed containers may explode when exposed to extreme heat.
- Avoid spreading burning liquid with water, isolate liquid.

- Do not allow run-off from fire fighting to enter drains or watercourses.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURE

- Wear appropriate protective equipment, e.g. respirators, eye protection, gloves and safety shoes.
- Avoid substance contact with eyes. Do not inhale vapours.
- Ensure supply of fresh air in enclosed rooms.

ENVIRONMENTAL PRECAUTIONS

- Eliminate sources of ignition.
- Keep public away.
- Contain spilled liquid with sand or other non-combustible absorbent materials
- Wash area and prevent runoff into drains and sewerage system.
- Advise authorities if substance has entered a watercourse or sewer or has contaminated soil or vegetation.

METHODS AND MATERIALS FOR CONTAINMENTS AND CLEANING UP

- Clean up all spills immediately.
- Absorb spill with absorbent and inert material, then place in container.
- Disposal in accordance to local/national regulations.

7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING

- Use appropriate personal protective equipment
- Keep out of reach of children.
- Handle containers with care. Open slowly in order to control possible pressure release.
- Do not pressurize containers.
- Do not ingest. Do not breathe in gas/fumes/vapour. Avoid contact with skin and eyes.
- For personal protection, see section 8.
- Use only in areas from which all naked lights and other sources of ignition have been excluded.
- Take precautionary measures against static discharge
- Protect from frost and extremes of temperature.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

- Keep containers tightly closed.
- Containers that are opened should be properly resealed and kept upright to prevent leakage.
- Store in cool, dry and well-ventilated place at temperature between 20°C to 40°C away from heat and sources of ignition.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

CONTROL PARAMETERS/OCCUPATIONAL LIMITS

This product has a component which contains trace amounts of the following substance with its relevant occupational exposure limits:

For component: epichlorohydrin, CAS No.: 25085-99-8
Singapore Permissible Exposure Level (PEL), long term: 2 ppm / 7.6 mg/m³

APPROPRIATE ENGINEERING CONTROL MEASURES

- Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective occupational exposure limits.
- Ensure eyewash stations and safety showers are close to the workstation location.

PERSONAL PROTECTION

- Respiratory Protection: Use of NIOSH-approved respirators with organic vapour cartridges is recommended.
- Hand Protection: Use of solvent resistance type or chemical resistant type of protective gloves is recommended.
- Eye Protection: Use of safety glasses or goggles with side shields is recommended.
- Skin / Body Protection: Wear chemical resistant clothes and safety shoes when handling product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Liquid
Odour	:	Aromatic hydrocarbon odour
Odour threshold	:	Not available
pH	:	Approx. 8.0
Melting point/freezing point	:	Not available
Initial boiling point and boiling range	:	100 degC
Flash point	:	Not applicable
Evaporation rate	:	Not available
Flammability (solid, gas)	:	Not available
Lower flammability or explosive limit	:	Not available
Upper flammability or explosive limit	:	Not available
Vapour pressure	:	Not available
Vapour density	:	Not available
Relative density	:	Not available
Solubility	:	Not soluble in water
Partition coefficient	:	Not available
Auto-ignition temperature	:	Not available
Decomposition temperature	:	Not available
Viscosity	:	Not available
Specific Gravity	:	Approx. 1.26
Volatile Content	:	40-55%

10. STABILITY AND REACTIVITY

REACTIVITY

- No dangerous reaction known under condition of normal use.

CHEMICAL STABILITY

- The product is stable under recommended storage and handling conditions. (see section 7)

POSSIBILITY OF HAZARDOUS REACTION

- Under normal conditions of storage and use, hazardous reaction will not occur.

CONDITIONS TO AVOID

- Keep away from oxidising agents, strongly alkaline and strongly acidic materials in order to avoid exothermic reactions. Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, drill, grind or expose containers to heat or sources of ignition.

HAZARDOUS DECOMPOSITION PRODUCTS

- When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, oxides of nitrogen and smoke.

11. TOXICOLOGICAL INFORMATION

This product has not been tested and all the toxicological statements have been derived from the respective components' available toxicity information.

Acute toxicity

Experimental/calculated data:

LD50, oral: > 5,000 mg/kg

LD50, dermal: > 5,000 mg/kg

LC50, inhalation: > 20 mg/L

Skin and Eye Irritation

This product may cause skin and eye irritation due to the following component:

Bisphenol A/epichlorohydrin resin, CAS No.: 25068-38-6 / 25085-99-8 - Skin and Eye Irritant (Cat. 2)

Respiratory / Skin sensitization

The product's components may cause an allergic skin reaction. This product is not expected to cause allergy or asthma symptoms or breathing difficulties if accidentally inhaled.

Germ cell mutagenicity / Carcinogenicity / Reproductive toxicity / Developmental toxicity

Based on the assessment of available information, the product is: not mutagenic in bacteria; has no known carcinogenic effect; and not expected to cause reproductive and developmental toxicity.

Specific target organ toxicity (single and repeated exposure)

Based on the available information, there is no specific target organ toxicity expected after a single or repeated exposure to the product.

12. ECOLOGICAL INFORMATION

The following ecological assessment is based on the available ecotoxicity information of the product's components.

Chronic toxicity to the aquatic environment

The product's major components are classified as Category 2 chronic aquatic toxicants. By estimation this product is considered toxic to aquatic life with long lasting effects (Chronic toxicity to the aquatic environment Category 2).

13. DISPOSAL CONSIDERATIONS

The product should not be allowed to enter drains and watercourses.

Preferred methods of waste disposal are incineration or biological treatment in federal/state approved facility. Empty containers should be recycled or disposed through an approved waste management facility or licensed contractor.

All federal, state and local environmental regulations shall be observed.

14. TRANSPORT INFORMATION

Transport to be in accordance with ADR/RID for road, IMDG for sea and IATA for Air.

LAND TRANSPORT

Not classified as Dangerous Goods by the criteria of the European Agreement concerning the international carriage of Dangerous Goods (ADR) by Road & Regulations concerning the international carriage of Dangerous goods (RID) by Rail.

SEA TRANSPORT

Not classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport of Sea.

SEA (Annex II of MARPOL 73/78 and the IBC code)

Not applicable

AIR TRANSPORT

Not classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by Air

15. REGULATORY INFORMATION

Applicable national regulations:

- Standards on Hazard communication for hazardous chemicals and dangerous goods
 - SS 586 : Part 1: 2014- Transport and storage of dangerous goods
 - SS 586 : Part 2: 2014- GHS of classification and labelling of chemicals- Singapore's adaptations
 - SS 586 : Part 3: 2008- Preparation of safety data sheets (SDS)
- MOM: Workplace Safety and Health Act & Workplace Safety and Health (General Provisions) Regulations
 - This product is subject to SDS, labelling, PEL and other requirements in the Acts/Regulations
- NEA: Environmental Protection and Management Act & Environmental Protection and Management (Hazardous Substances) Regulations.
 - This product is not subject to control under this Acts/Regulations
- SCDF: Fire Safety Act & Fire Safety (Petroleum and Flammable Materials) Regulations
 - This product is subject to the requirement of this Acts/Regulations
- SPF: The Arms and Explosive Act, the Arms and Explosives (Explosives) Rules, and the Arms and Explosives (Explosive Precursors) Rules
 - This product is not subject to the requirement of this Acts/Regulations

16. OTHER INFORMATION

Revision date: 19-Dec-2016

Abbreviation

ACGIH American Conference of Governmental Industrial Hygienists

TLV Threshold limit value

TWA Time-Weighted Average

OSHA Occupational Safety and Health Administration

PEL Permissible Exposure Limit

LD50 Lethal Dose

LC50 Median lethal concentration

IACR International Agency for Research in Cancer

Disclaimer

To the best of our knowledge, the information contained herein is accurate. However, the information is provided without any representation or warranty, expressed or implied, regarding its accuracy or completeness. Since the conditions of handling, storage, use and disposal are beyond our control and may be beyond our knowledge, for this and other reasons, we make no guarantee of results and assume no liability for damages incurred by the use of this product. Please be reminded that all chemicals may present unknown health hazards and should be used with caution.