

# Safety Data Sheet

## 1 PRODUCT AND COMPANY IDENTIFICATION

Product name: UNIPROTECTOR ALUMINUM BASE  
 Intended use: paint  
 Manufacture:  
 Company name: NIPPON PAINT MARINE COATINGS CO., LTD.  
 Address: 2-1-2 Oyodo-kita, Kita-ku, Osaka, 531-8511 Japan  
 Telephone No.: +81-6-6455-9590  
 Facsimile No.: +81-6-6450-4085  
 24 hours Emergency telephone No.: +81-6-6455-9590

## 2 HAZARDS IDENTIFICATION

CLASSIFICATION CODE Flammable liquids:Category3  
 Acute toxicity - inhalation: vapour:Category4  
 Skin corrosion/irritation:Category2  
 Serious eye damage/eye irritation:Category2  
 Germ cell mutagenicity:Category2  
 Carcinogenicity:Category2  
 Toxic to Reproduction:Category1B  
 Specific target organ toxicity - single exposure:Category1,Category2  
 Specific target organ toxicity - repeated exposure:Category1,Category2  
 Chronic hazards to the aquatic environment:Category2

Symbol



Hazard statement Danger  
 H226 Flammable liquid and vapour  
 H315 Causes skin irritation  
 H319 Causes serious eye irritation  
 H332 Harmful if inhaled  
 H341 Suspected of causing generic defects  
 H351 Suspected of causing cancer  
 H360 May damage fertility or the unborn child  
 H370 Causes damage to organs  
 H372 Causes damage to organs through prolonged or repeated exposure  
 H411 Toxic to aquatic life with long lasting effect  
 Comment P201 Obtain special instructions before use.  
 P202 Do not handle until all safety precautions have been read and understood.

- P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- P233 Keep container tightly closed.
- P240 Ground/bond container and receiving equipment.
- P241 Use explosion-proof electrical/ventilating/lighting equipment.
- P242 Use only non-sparking tools.
- P243 Take precautionary measures against static discharge.
- P260 Do not breathe dust/fume/gas/mist/vapours/spray.
- P264 Wash hands, mouth etc. thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P273 Avoid release to the environment, if this is not the intended use.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P314 Get medical advice/attention if you feel unwell.
- P321 Specific treatment.(If immediate specific measures are required.)
- P330 Rinse mouth.
- P391 Collect spillage.
- P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P304+P312 IF INHALED: Call a POISON CENTER/doctor, if you feel unwell.
- P304+P340 IF INHALED: Remove person to fresh air and keep 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.
- P308+P313 IF exposed or concerned: Get medical advice/attention.
- P332+P313 IF skin irritation occurs: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P362+P364 Take off contaminated clothing and wash it before reuse.
- P370+P378 In case of fire: Use appropriate media to extinguish.
- P405 Store locked up.
- P403+P235 Store in a well-ventilated place. Keep cool.
- Store in a well-ventilated place. Protect from sunlight. Do not expose at temperature exceeding 50deg.C.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulation.

### 3 COMPOSITION/INFORMATION ON INGREDIENTS

Substance or Preparation: Preparation.

Chemical nature: epoxy resin paint

<u>Ingredient Name</u>	<u>CAS No.</u>	<u>Concentration[%]</u>	<u>EC No.</u>
reaction product:bisphenol-A-(epichlorhydrin)	25036-25-3	30-35	
xylene	1330-20-7	10-15	215-535-7
n-butanol	71-36-3	1-5	200-751-6
ethylbenzene	100-41-4	1-5	202-849-4
Stoddard solvent	8052-41-3	1-5	232-489-3
1,2,4-trimethylbenzene	95-63-6	1-5	202-436-9
trimethylbenzene (except 1,3,5-trimethylbenzene)	25551-13-7	0.1-1	247-099-9
mesitylene ; 1,3,5-trimethylbenzene	108-67-8	0.1-1	203-604-4

Notes: this product contained the following substances that present a human hazard in accordance with

EC No. 1272/2008.

ML code is one of manufacturer's own marks to control the quantity of new material for the countries that regulate the new material.

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## 4 FIRST-AID MEASURES

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Inhalation:	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Skin contact:	In case of contact, immediately wash skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately.
Eye contact:	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. Get medical attention immediately. Call a physician if irritation develops and persists.
Ingestion:	If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

## 5 FIRE-FIGHTING MEASURES

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	Do NOT use water jet. Use water spray or dry chemicals. Keep adjacent receptacles cool with copious quantities of water.
	suitable fire-extinguishing media [ ] water fog, [ OK ] CO <sub>2</sub> , [ OK ] foam, [ OK ] dry chemicals, [ OK ] dry sand.
Notes:	Fire will produce dense black smoke. Decomposition products may be hazardous to health. Avoid exposure and use breathing apparatus as appropriate. Cool closed containers exposed to fire by spraying them with water. Do not allow run off water and contaminants from fire fighting to enter drains or watercourses. See section 10.

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## 6 ACCIDENTAL RELEASE MEASURES

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Avoid all sources of ignition (e.g. naked lights, unprotected light bulbs, electric handtools).  
Ventilate the area and avoid breathing vapors.  
Wear protective clothing and self-contained breathing apparatus when dealing with spillage or fire.  
Collect spillage, where practical, for safe disposal.  
Should be disposed of wastes and empty containers in accordance with regulations made under the control of pollution acts and the environmental protection acts.  
Collect spillage using absorbent material and dispose of spillage on the floor in a safe manner.  
Keep away from drains, surface- and ground-water and soil.

Do not allow spillage to enter drains or water courses.  
Refer to headings 8 and 13.

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## 7 HANDLING AND STORAGE

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### Handling:

- Keep away from heat, sparks and flame.
- Keep container closed.
- The product can charge static electricity.
- Operators should wear non-static clothing (at least 60% natural fiber content) and anti-static clothing.
- Do not breath (dust, vapor, mist, gas).
- Use only in a well ventilated space.
- Do not get in eyes, on skin, or on clothing.
- Avoid prolonged or repeated contact with skin.
- Wash thoroughly after handling.
- Do not ingest.
- Do not eat or swallow.
- Avoid release to the environment.
- Protection as shown in section 8.

### Storage:

- Keep container closed.
- Avoid prolonged or repeated contact with skin and inhalation.
- Keep away from heat, sparks and flame.
- Store in a well-ventilated, dry place away from sources of heat and direct sunshine.
- Do not store above 40 deg.C. (104 deg.F.).
- Avoid prolonged or repeated contact with skin.
- Keep locked up.
- Do not ingest.
- Do not eat or swallow.
- Avoid release to the environment.

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## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

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Engineering Measures: Ensure adequate ventilation during and after use to prevent vaporization.  
An eye wash facility should be readily available.  
The product should not be allowed to enter the environment.  
Facilities storing or utilizing this material should be equipped with an eye wash facility and a safety shower.

### Exposure limit:

<u>Ingredient name</u>	<u>EU TLV(TWA)</u>	<u>ACGIH TLV(TWA)</u>
reaction product:bisphenol-A-(epichlorhydrin)	not est.	not est.
xylene	50 ppm	100 ppm
n-butanol	not est.	20 ppm
ethylbenzene	100 ppm	20 ppm
Stoddard solvent	not est.	100 ppm
1,2,4-trimethylbenzene	20 ppm	not est.
trimethylbenzene (except 1,3,5-trimethylbenzene)	not est.	25 ppm

mesitylene ; 1,3,5-trimethylbenzene                      20 ppm                      25 ppm

Notes:(RD)=respirable dust. (c)=ceiling limit. (Skin)=skin penetrative.  
Mppcf=millions of particles per cubic foot.

Personal protection:

Respiratory protection:                      Wear appropriate equipment shown in EU directive 89/656/EC.  
Hand protection:                              Wear impervious glove.  
Eye protection:                                Wear chemical splash goggles and face shield when eye and face contact is possible due to splashing or spraying of material.  
Skin protection:                                Wear chemical resistant clothing such as gloves, apron, boots or whole bodysuits made from neoprene, as appropriate.

Environmental exposure control:                      Do NOT let this product enter the environment.

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## 9 PHYSICAL AND CHEMICAL PROPERTIES

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Physical state:                      Liquid  
color:                                      silver  
odor:                                        solvent odor  
pH:                                         no data.  
boiling point(range):                      118 - 210[deg.C](244 - 410[deg.F])  
flash point:                                24[deg.C](75.2[deg.F])  
ignition temperature:                      288[deg.C](550[deg.F])  
lower explosive limit:                      0.6[%]  
higher explosive limit:                      11.25[%]  
vapor pressure:                              1333[Pa]  
specific density:                            1.31/23[deg.C](73[deg.F])  
vapor density:                              The vapor and the gas are heavier than air.  
solubility in water:                        None or poor in water  
percentage volatile:                        27.3[%]

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## 10 STABILITY AND REACTIVITY

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Stability:                                      Stable under recommended storage and handing conditions (see section 7).  
When exposed to high temperature, may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, oxides of nitrogen and smoke.  
Hazardous reaction:                        Hazardous reaction will not occur.  
Condition to avoid:                         Avoid heating temperatures above 40 deg.C.  
Materials to avoid:                         Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid possible exothermic reactions.  
Hazardous decomposition products:                      The products decomposed on heating producing their oxide or monomers.

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## 11 TOXICOLOGICAL INFORMATION

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There are no data available on the product itself.

Toxicological information of ingredients:

acute toxicity:

ethylbenzene

LC50(inhalation:vapour, rat)=4000[ppm/1H]

LD50(oral, rat)=3500[mg/kg]

mesitylene ; 1,3,5-trimethylbenzene

LD50(oral, rat)=5000[mg/kg]

xylene

LC50(inhalation:vapour, rat)=6350[ppm/1H]

LD50(skin, rabbit)=1700[mg/kg]

LD50(oral, rat)=3500[mg/kg]

n-butanol

LD50(skin, rabbit)=3400[mg/kg]

LD50(oral, rat)=2100[mg/kg]

1,2,4-trimethylbenzene

LD50(oral, rat)=5000[mg/kg]

local effects:

eye irritant

ethylbenzene

mesitylene ; 1,3,5-trimethylbenzene

xylene

reaction product:bisphenol-A-(epichlorhydrin)

trimethylbenzene (except 1,3,5-trimethylbenzene)

n-butanol

skin irritant

ethylbenzene

mesitylene ; 1,3,5-trimethylbenzene

xylene

trimethylbenzene (except 1,3,5-trimethylbenzene)

n-butanol

Stoddard solvent

sensitization:

No data.

chronically long term effect:

xylene

reaction product:bisphenol-A-(epichlorhydrin)

n-butanol

specific effects

carcinogenic:

ethylbenzene

Carcinogenic(IARC);Class:2B

Carcinogenic(OSHA)

Carcinogenic(CLP)

xylene

Carcinogenic(NTP);Known to be human carcinogen

toxic for reproduction

ethylbenzene

Toxic for reproduction(CLP)

xylene

Toxic for reproduction(CLP)

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## 12 ECOLOGICAL INFORMATION

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For spillage or waste, take care to avoid contaminating the environment.

Prevent leakage into the sewer, waterway or legal areas to avoid pollution.

There are no data available on the product itself.

Ecological information of ingredients

acute toxicity n-butanol TLm24(goldenfish)=1900mg/L  
1,2,4-trimethylbenzene LC50(48h,oryzias latipes)=18mg/L  
mesitylene ; 1,3,5-trimethylbenzene LC50(48h,oryzias latipes)=8.6mg/L

persistence ethylbenzene biodegradable:81-100%(2week/ )  
1,2,4-trimethylbenzene non-biodegradable:4-18%(4week/ )  
mesitylene ; 1,3,5-trimethylbenzene non-biodegradable:0%(2week/ )

1,2,4-trimethylbenzene example of bioaccumulation:275X(8week)  
mesitylene ; 1,3,5-trimethylbenzene example of bioaccumulation:342X(10week)

Data are based on "Biological and Bioaccumulation Data of Existing Chemicals Based on the CSCL Japan" Compiled under the supervision of METI(MITI) Japan.

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## 13 DISPOSAL CONSIDERATIONS

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The product should not be allowed to release into the drains and watercourses.  
All notification, clean-up and disposal should be carried out in accordance with European Union, governmental and local regulations  
Preferred method of waste disposal are incineration or biological treatment in federal/state approved facility  
Wastes and empty containers should be disposed of in accordance with regulations made under the control of pollution acts and the environmental protection acts  
Empty containers should be recycled or disposed of through an approved waste management facility.  
It is strongly advised not to let the chemical enter into the environment.  
It may be toxic or harmful to aquatic organisms.

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## 14 TRANSPORT INFORMATION

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UN regulation

UN Shipping name:	PAINT(including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)
UN identification number:	1263
UN Class:	class 3 Flammable liquids.
UN Packaging group:	III
IMDG Class:	class 3.3 High flashpoint group.
storage temperature	Store below 40 deg.C.(104deg.F.). See section 7, Handling and storage.
UN MARINE POLLUTANT	MARINE POLLUTANT. Paste the label of "MARINE POLLUTANT".

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## 15 REGULATORY INFORMATION

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The information on the SDS is based on the present state of our knowledge and on current EU laws.  
Please refer to any other national measures that may be relevant.

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## 16 OTHER INFORMATION

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This information contained in this data sheet represents the best information currently available to us.  
However, no warranty is made with respect to its completeness and we assume no liability resulting from it.  
It is advised to make their own tests to determinate the safety and suitability of each such product or combination for their own.

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.  
The product should not be used for purposes other than shown in the safety data sheet without first  
obtaining written advice.

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# Safety Data Sheet

## 1 PRODUCT AND COMPANY IDENTIFICATION

Product name: UNIPROTECTOR BRONZE BASE  
 Intended use: paint  
 Manufacture:  
     Company name: NIPPON PAINT MARINE COATINGS CO., LTD.  
     Address: 2-1-2 Oyodo-kita, Kita-ku, Osaka, 531-8511 Japan  
     Telephone No.: +81-6-6455-9590  
     Facsimile No.: +81-6-6450-4085  
     24 hours Emergency telephone No.: +81-6-6455-9590

## 2 HAZARDS IDENTIFICATION

CLASSIFICATION CODE    Flammable liquids:Category3  
                               Acute toxicity - inhalation: vapour:Category4  
                               Skin corrosion/irritation:Category2  
                               Serious eye damage/eye irritation:Category2  
                               Carcinogenicity:Category2  
                               Toxic to Reproduction:Category1B  
                               Specific target organ toxicity - single exposure:Category1,Category2  
                               Specific target organ toxicity - repeated exposure:Category1,Category2  
                               Chronic hazards to the aquatic environment:Category2

Symbol



Hazard statement    Danger  
                               H226 Flammable liquid and vapour  
                               H315 Causes skin irritation  
                               H319 Causes serious eye irritation  
                               H332 Harmful if inhaled  
                               H351 Suspected of causing cancer  
                               H360 May damage fertility or the unborn child  
                               H370 Causes damage to organs  
                               H372 Causes damage to organs through prolonged or repeated exposure  
                               H411 Toxic to aquatic life with long lasting effect  
 Comment            P201 Obtain special instructions before use.  
                               P202 Do not handle until all safety precautions have been read and understood.  
                               P210 Keep away form heat/sparks/open flames/hot surfaces. - No smoking.  
                               P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.  
P241 Use explosion-proof electrical/ventilating/lighting equipment.  
P242 Use only non-sparking tools.  
P243 Take precautionary measures against static discharge.  
P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P264 Wash hands, mouth etc. thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.  
P273 Avoid release to the environment, if this is not the intended use.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P314 Get medical advice/attention if you feel unwell.  
P321 Specific treatment.(If immediate specific measures are required.)  
P330 Rinse mouth.  
P391 Collect spillage.  
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P304+P312 IF INHALED: Call a POISON CENTER/doctor, if you feel unwell.  
P304+P340 IF INHALED: Remove person to fresh air and keep 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.  
P308+P313 IF exposed or concerned: Get medical advice/attention.  
P332+P313 IF skin irritation occurs: Get medical advice/attention.  
P337+P313 If eye irritation persists: Get medical advice/attention.  
P362+P364 Take off contaminated clothing and wash it before reuse.  
P370+P378 In case of fire: Use appropriate media to extinguish.  
P405 Store locked up.  
P403+P235 Store in a well-ventilated place. Keep cool.  
Store in a well-ventilated place. Protect from sunlight. Do not expose to temperatures exceeding 50deg.C.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulation.

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## 3 COMPOSITION/INFORMATION ON INGREDIENTS

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Substance or Preparation: Preparation.

Chemical nature: epoxy resin paint

<u>Ingredient Name</u>	<u>CAS No.</u>	<u>Concentration[%]</u>	<u>EC No.</u>
reaction product:bisphenol-A-(epichlorhydrin)	25036-25-3	30-35	
xylene	1330-20-7	10-15	215-535-7
n-butanol	71-36-3	1-5	200-751-6
iron hydroxide oxide	20344-49-4	1-5	243-746-4
ethylbenzene	100-41-4	1-5	202-849-4
Stoddard solvent	8052-41-3	1-5	232-489-3
trimethylbenzene (except 1,3,5-trimethylbenzene)	25551-13-7	1-5	247-099-9
1,2,4-trimethylbenzene	95-63-6	0.1-1	202-436-9
mesitylene ; 1,3,5-trimethylbenzene	108-67-8	0.1-1	203-604-4

Notes: this product contained the following substances that present a human hazard in accordance with

EC No. 1272/2008.

ML code is one of manufacturer's own marks to control the quantity of new material for the countries that regulate the new material.

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## 4 FIRST-AID MEASURES

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- Inhalation:** If inhaled, remove to fresh air.  
If not breathing, give artificial respiration.  
If breathing is difficult, give oxygen.  
Get medical attention immediately.
- Skin contact:** In case of contact, immediately wash skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.  
Get medical attention immediately.
- Eye contact:** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.  
If easy to do, remove contact lenses, if worn.  
Get medical attention immediately.  
Call a physician if irritation develops and persists.
- Ingestion:** If swallowed, do NOT induce vomiting unless directed to do so by medical personnel.  
Never give anything by mouth to an unconscious person.  
Get medical attention immediately.

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## 5 FIRE-FIGHTING MEASURES

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- Do NOT use water jet.  
Use water spray or dry chemicals.  
Keep adjacent receptacles cool with copious quantities of water.
- suitable fire-extinguishing media  
[ OK ]water fog,[ OK ]CO2,[ OK ]foam,[ OK ]dry chemicals,[ OK ]dry sand.
- Notes:** Fire will produce dense black smoke.  
Decomposition products may be hazardous to health.  
Avoid exposure and use breathing apparatus as appropriate.  
Cool closed containers exposed to fire by spraying them with water.  
Do not allow run off water and contaminants from fire fighting to enter drains or watercourses.  
See section 10.

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## 6 ACCIDENTAL RELEASE MEASURES

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- Avoid all sources of ignition(e.g.naked lights, unprotected light bulbs,electric handtools).  
Ventilate the area and avoid breathing vapors.  
Wear protective clothing and self-contained breathing apparatus when dealing with spillage or fire.  
Collect spillage, where practicable, for safe disposal.  
Should be disposed of wastes and empty containers in accordance with regulations made under the control of pollution acts and the environmental protection acts.  
Collect spillage, where practicable, using absorbent material, and dispose of spillage on the floor in a safe manner.  
Keep away from drains,surface- and ground-water and soil.  
Do not allow spills to enter drains or water courses.

Refer to headings 8 and 13.

## 7 HANDLING AND STORAGE

### Handling:

Keep away from heat, sparks, and flame.

Keep container closed.

The product may charge electro statically.

Operators should wear clothing which dose not generate static (at least 60% natural fiber) and antistatic food wear.

Do not breath (dust, vapor, mist, gas).

Use only with ventilation.

Do not get in eyes, on skin, or on clothing.

Avoid prolonged or repeated contact with skin.

Wash thoroughly after handling.

Do not take internally.

Do not taste or swallow.

Avoid release to environment.

Protection as shown in section 8.

### Storage:

Keep container closed.

Avoid prolonged or repeated contact with skin and inhalation.

Keep away from heat, sparks and flame.

Store in a well-ventilated, dry place away from sources of heat and direct sunshine.

Do not store above 40 deg.C. (104 deg.F.).

Avoid prolonged or repeated contact with skin.

Keep locked up.

Do not take internally.

Do not taste or swallow.

Do not allow to environment.

## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures: Prevent vapor build up by providing adequate ventilation during and after use.

An eye wash facility should be readily available.

The product should not be allowed to enter environment.

Facilities storing or utilizing this material should be equipped with an eye wash facility and a safety shower.

### Exposure limit:

<u>Ingredient name</u>	<u>EU TLV(TWA)</u>	<u>ACGIH TLV(TWA)</u>
reaction product:bisphenol-A-(epichlorhydrin)	not est.	not est.
xylene	50 ppm	100 ppm
n-butanol	not est.	20 ppm
iron hydroxide oxide	not est.	10 mg/m3
ethylbenzene	100 ppm	100 ppm
Stoddard solvent	not est.	100 ppm
trimethylbenzene (except 1,3,5-trimethylbenzene)	not est.	25 ppm

1,2,4-trimethylbenzene	20 ppm	not est.
mesitylene ; 1,3,5-trimethylbenzene	20 ppm	25 ppm

Notes:(RD)=respirable dust. ( c )=ceiling limit. (Skin)=skin penetrative.  
Mppcf=millions of particles per cubic foot.

Personal protection:

Respiratory protection:	Wear appropriate equipment shown in EU directive 89/656/EC.
Hand protection:	Wear impervious gloves.
Eye protection:	Wear chemical splash goggles and face shield when eye and face contact is possible due to splashing or spraying of material.
Skin protection:	Wear chemical resistant clothing such as gloves, apron, boots or whole bodysuits made from neoprene, as appropriate.

Environmental exposure control: Do NOT let this product enter the environment.

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## 9 PHYSICAL AND CHEMICAL PROPERTIES

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Physical state:	Liquid
color:	brown
odor:	solvent odor
pH:	no data.
boiling point(range):	118 - 210[deg.C](244 - 410[deg.F])
flash point:	24[deg.C](75.2[deg.F])
ignition temperature:	288[deg.C](550[deg.F])
lower explosive limit:	0.6[%]
higher explosive limit:	11.25[%]
vapor pressure:	1333[Pa]
specific density:	1.32/20[deg.C](68[deg.F])
vapor density:	The vapor and the gas are heavier than air.
solubility in water:	None or poor in water
percentage volatile:	26.9[%]

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## 10 STABILITY AND REACTIVITY

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Stability:	Stable under recommended storage and handling conditions (see section 7). When exposed to high temperature, may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, oxides of nitrogen and smoke.
Hazardous reaction:	Hazardous reaction will not occur.
Condition to avoid:	Avoid heating temperatures above 40 deg.C.
Materials to avoid:	Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid possible exothermic reactions.
Hazardous decomposition products:	The products decomposed on heating producing their oxide or monomers.

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## 11 TOXICOLOGICAL INFORMATION

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There are no data available on the product itself.

Toxicological information of ingredients:

acute toxicity:
ethylbenzene
LC50(inhalation:vapour, rat)=4000[ppm/1H]

LD50(oral,rat)=3500[mg/kg]  
xylene  
LC50(inhalation:vapour,rat)=6700[ppm/1H]  
LD50(oral,rat)=3500[mg/kg]  
n-butanol  
LD50(skin,rabbit)=3636[mg/kg]  
LD50(oral,rat)=1227[mg/kg]  
1,2,4-trimethylbenzene  
LD50(oral,rat)=5000[mg/kg]  
local effects:  
eye irritant  
ethylbenzene  
mesitylene ; 1,3,5-trimethylbenzene  
xylene  
reaction product:bisphenol-A-(epichlorhydrin)  
trimethylbenzene (except 1,3,5-trimethylbenzene)  
n-butanol  
skin irritant  
ethylbenzene  
mesitylene ; 1,3,5-trimethylbenzene  
xylene  
trimethylbenzene (except 1,3,5-trimethylbenzene)  
n-butanol  
Stoddard solvent  
sensitization:  
No data.  
chronically long term effect:  
xylene  
iron hydroxide oxide  
reaction product:bisphenol-A-(epichlorhydrin)  
n-butanol  
specific effects  
carcinogenic:  
ethylbenzene  
Carcinogenic(IARC);Class:2B  
Carcinogenic(CLP)  
toxic for reproduction  
ethylbenzene  
Toxic for reproduction(CLP)  
xylene  
Toxic for reproduction(CLP)

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## 12 ECOLOGICAL INFORMATION

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For spills or waste, take care to avoid contaminating environment.

Prevent spills and wastewater from entering sewers, water courses or law areas to avoid pollution.

There are no data available on the product itself.

Ecological information of ingredients

acute toxicity	n-butanol TLm24(goldenfish)=1900mg/L 1,2,4-trimethylbenzene LC50(48h,oryzias latipes)=18mg/L mesitylene ; 1,3,5-trimethylbenzene LC50(48h,oryzias latipes)=8.6mg/L
persistence	ethylbenzene biodegradable:81-100%(2week/ )

1,2,4-trimethylbenzene non-biodegradable:4-18%(4week/ )

mesitylene ; 1,3,5-trimethylbenzene non-biodegradable:0%(2week/ )

1,2,4-trimethylbenzene example of bioaccumulation:275X(8week)

mesitylene ; 1,3,5-trimethylbenzene example of bioaccumulation:342X(10week)

Data are based on "Biological and Bioaccumulation Data of Existing Chemicals Based on the SCSL Japan" Complied under the supervision of METI(MITI) Japan.

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## 13 DISPOSAL CONSIDERATIONS

---

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

All notification, clean-up and disposal should be carried out in accordance with European Union, governmental and local regulations

Preferred method of waste disposal are incineration or biological treatment in federal/state approved facility

Wastes and empty containers should be disposed of in accordance with regulations made under the control of pollution acts and the environmental protection acts

Empty containers should be recycled or disposed of through an approved waste management facility.

It is strongly advised not to let the chemical enter into the environment.

It may be toxic or harmful to aquatic organisms.

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## 14 TRANSPORT INFORMATION

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UN regulation

UN Shipping name: PAINT(including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)

UN identification number: 1263

UN Class: class 3 Flammable liquids.

UN Packaging group: III

IMDG Class: class 3.3 High flashpoint group.

storage temperature Store below 40 deg.C.(104deg.F.).

See section 7,Handling and storage.

UN MARINE POLLUTANT MARINE POLLUTANT. Paste the label of "MARINE POLLUTANT".

---

## 15 REGULATORY INFORMATION

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The information on the SDS is based on the present state of our knowledge and on current EU laws.

Please refer to any other national measures that may be relevant.

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## 16 OTHER INFORMATION

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R20:Harmful by inhalation

R36/38:Irritating to eyes and skin

R39/24:Toxic-danger of very serious irreversible effects in contact with skin.

R39/24/25:Toxic-danger of very serious irreversible effects in contact with skin and if swallowed.

R40:Possible risk of irreversible effects

R51/53:Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R60:May impair fertility

R61:May cause harm to the unborn child

S16:Keep away from sources of ignition -- No smoking

S23:Do not breath gas/fumes/vapor/spray (appropriate wording to be specified by the manufacturer).

S26:In case of contact with eyes, rinse immediately with plenty of water and seek medical.

S28:After contact with skin, wash immediately with plenty of WATER and SOAP.

S29:Do not empty into drains.

S33:Take precautionary measures against static

S36/37/39:Wear suitable protective clothing and gloves and eye/face protection.

S37:Wear suitable gloves

S45:In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S53:Avoid exposure-obtain special instruction

This information contained in this data sheet represents the best information currently available to us.

However, no warranty is made with respect to its completeness and we assume no liability resulting us from its.

It is advised to make their own tests to determinate the safety and suitability of each such product or combination for their own.

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

The product should not be used for purposes other than shown in the safety data sheet without first obtaining written advice.

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# Safety Data Sheet

## 1 PRODUCT AND COMPANY IDENTIFICATION

Product name: UNIPROTECTOR HARDENER  
 Intended use: hardener for paint  
 Manufacture:  
 Company name: NIPPON PAINT MARINE COATINGS CO., LTD.  
 Address: 2-1-2 Oyodo-kita, Kita-ku, Osaka, 531-8511 Japan  
 Telephone No.: +81-6-6455-9590  
 Facsimile No.: +81-6-6450-4085  
 24 hours Emergency telephone No.: +81-6-6455-9590

## 2 HAZARDS IDENTIFICATION

CLASSIFICATION CODE Flammable liquids:Category3  
 Acute toxicity - inhalation: vapour:Category4  
 Skin corrosion/irritation:Category2  
 Serious eye damage/eye irritation:Category2  
 Carcinogenicity:Category2  
 Toxic to Reproduction:Category1B  
 Specific target organ toxicity - single exposure:Category1,Category2,Category3  
 Specific target organ toxicity - repeated exposure:Category1  
 Chronic hazards to the aquatic environment:Category2

Symbol



Hazard statement Danger  
 H226 Flammable liquid and vapour  
 H315 Causes skin irritation  
 H319 Causes serious eye irritation  
 H332 Harmful if inhaled  
 H351 Suspected of causing cancer  
 H360 May damage fertility or the unborn child  
 H370 Causes damage to organs  
 H372 Causes damage to organs through prolonged or repeated exposure  
 H411 Toxic to aquatic life with long lasting effect

Comment P201 Obtain special instructions before use.  
 P202 Do not handle until all safety precautions have been read and understood.  
 P210 Keep away form heat/sparks/open flames/hot surfaces. - No smoking.  
 P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.  
P241 Use explosion-proof electrical/ventilating/lighting equipment.  
P242 Use only non-sparking tools.  
P243 Take precautionary measures against static discharge.  
P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P264 Wash hands, mouth etc. thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.  
P273 Avoid release to the environment, if this is not the intended use.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P314 Get medical advice/attention if you feel unwell.  
P321 Specific treatment.(If immediate specific measures are required.)  
P330 Rinse mouth.  
P391 Collect spillage.  
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P304+P312 IF INHALED: Call a POISON CENTER/doctor, if you feel unwell.  
P304+P340 IF INHALED: Remove person to fresh air and keep 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.  
P308+P313 IF exposed or concerned: Get medical advice/attention.  
P332+P313 IF skin irritation occurs: Get medical advice/attention.  
P337+P313 If eye irritation persists: Get medical advice/attention.  
P362+P364 Take off contaminated clothing and wash it before reuse.  
P370+P378 In case of fire: Use appropriate media to extinguish.  
P405 Store locked up.  
P403+P235 Store in a well-ventilated place. Keep cool.  
Store in a well-ventilated place. Protect from sunlight. Do not expose to temperatures exceeding 50deg.C.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulation.

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## 3 COMPOSITION/INFORMATION ON INGREDIENTS

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Substance or Preparation: Preparation.

Chemical nature: polyamideamine resin solution

<u>Ingredient Name</u>	<u>CAS No.</u>	<u>Concentration[%]</u>	<u>EC No.</u>
xylene	1330-20-7	35-40	215-535-7
n-butanol	71-36-3	10-15	200-751-6
ethylbenzene	100-41-4	1-5	202-849-4

Notes: this product contained the following substances that present a human hazard in accordance with

EC No. 1272/2008.

ML code is one of manufacturer's own marks to control the quantity of new material for the countries that regulate the new material.

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## 4 FIRST-AID MEASURES

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- Inhalation: If inhaled, remove to fresh air.  
If not breathing, give artificial respiration.  
If breathing is difficult, give oxygen.  
Get medical attention immediately.
- Skin contact: In case of contact, immediately wash skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.  
Get medical attention immediately.
- Eye contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.  
If easy to do, remove contact lenses, if worn.  
Get medical attention immediately.  
Call a physician if irritation develops and persists.
- Ingestion: If swallowed, do NOT induce vomiting unless directed to do so by medical personnel.  
Never give anything by mouth to an unconscious person.  
Get medical attention immediately.

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## 5 FIRE-FIGHTING MEASURES

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- Do NOT use water jet.  
Use water spray or dry chemicals.  
Keep adjacent receptacles cool with copious quantities of water.
- suitable fire-extinguishing media  
[ OK ]water fog,[ OK ]CO2,[ OK ]foam,[ OK ]dry chemicals,[ OK ]dry sand.
- Notes: Fire will produce dense black smoke.  
Decomposition products may be hazardous to health.  
Avoid exposure and use breathing apparatus as appropriate.  
Cool closed containers exposed to fire by spraying them with water.  
Do not allow run off water and contaminants from fire fighting to enter drains or watercourses.  
See section 10.

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## 6 ACCIDENTAL RELEASE MEASURES

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- Avoid all sources of ignition(e.g.naked lights, unprotected light bulbs,electric handtools).  
Ventilate the area and avoid breathing vapors.  
Wear protective clothing and self-contained breathing apparatus when dealing with spillage or fire.  
Collect spillage, where practicable, for safe disposal.  
Should be disposed of wastes and empty containers in accordance with regulations made under the control of pollution acts and the environmental protection acts.  
Collect spillage, where practicable, using absorbent material, and dispose of spillage on the floor in a safe manner.  
Keep away from drains,surface- and ground-water and soil.  
Do not allow spills to enter drains or water courses.  
Refer to headings 8 and 13.

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## 7 HANDLING AND STORAGE

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- Handling:  
Keep away from heat, sparks, and flame.  
Keep container closed.

The product may charge electro statically.

Operators should wear clothing which dose not generate static (at least 60% natural fiber) and antistatic food wear.

Do not breath (dust, vapor, mist, gas).

Use only with ventilation.

Do not get in eyes, on skin, or on clothing.

Avoid prolonged or repeated contact with skin.

Wash thoroughly after handling.

Do not take internally.

Do not taste or swallow.

Avoid release to environment.

Protection as shown in section 8.

Storage:

Keep container closed.

Avoid prolonged or repeated contact with skin and inhalation.

Keep away from heat, sparks and flame.

Store in a well-ventilated, dry place away from sources of heat and direct sunshine.

Do not store above 40 deg.C. (104 deg.F.).

Avoid prolonged or repeated contact with skin.

Keep locked up.

Do not take internally.

Do not taste or swallow.

Do not allow to environment.

## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Measures:** Prevent vapor build up by providing adequate ventilation during and after use.  
 An eye wash facility should be readily available.  
 The product should not be allowed to enter environment.  
 Facilities storing or utilizing this material should be equipped with an eye wash facility and a safety shower.

**Exposure limit:**

<u>Ingredient name</u>	<u>EU TLV(TWA)</u>	<u>ACGIH TLV(TWA)</u>
xylene	50 ppm	100 ppm
n-butanol	not est.	20 ppm
ethylbenzene	100 ppm	100 ppm

Notes:(RD)=respirable dust. ( c )=ceiling limit. (Skin)=skin penetrative.  
 Mppcf=millions of particles per cubic foot.

**Personal protection:**

**Respiratory protection:** Wear appropriate equipment shown in EU directive 89/656/EC.

**Hand protection:** Wear impervious gloves.

**Eye protection:** Wear chemical splash goggles and face shield when eye and face contact is possible due to splashing or spraying of material.

**Skin protection:** Wear chemical resistant clothing such as gloves, apron, boots or whole bodysuits made from neoprene, as appropriate.

**Environmental exposure control:** Do NOT let this product enter the environment.

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## 9 PHYSICAL AND CHEMICAL PROPERTIES

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Physical state:	Liquid
color:	brown
odor:	amine odor
pH:	no data.
boiling point(range):	118 - 144[deg.C](244 - 291[deg.F])
flash point:	28[deg.C](82.4[deg.F])
ignition temperature:	367[deg.C](693[deg.F])
lower explosive limit:	1.1[%]
higher explosive limit:	11.25[%]
vapor pressure:	1333[Pa]
specific density:	0.94/20[deg.C](68[deg.F])
vapor density:	The vapor and the gas are heavier than air.
solubility in water:	None or poor in water
percentage volatile:	47.9[%]

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## 10 STABILITY AND REACTIVITY

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Stability:	Stable under recommended storage and handling conditions (see section 7). When exposed to high temperature, may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, oxides of nitrogen and smoke.
Hazardous reaction:	Hazardous reaction will not occur.
Condition to avoid:	Avoid heating temperatures above 40 deg.C.
Materials to avoid:	Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid possible exothermic reactions.
Hazardous decomposition products:	The products decomposed on heating producing their oxide or monomers.

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## 11 TOXICOLOGICAL INFORMATION

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There are no data available on the product itself.

Toxicological information of ingredients:

acute toxicity:

ethylbenzene

LC50(inhalation:vapour, rat)=4000[ppm/1H]

LD50(oral, rat)=3500[mg/kg]

xylene

LC50(inhalation:vapour, rat)=6700[ppm/1H]

LD50(oral, rat)=3500[mg/kg]

n-butanol

LD50(skin, rabbit)=3636[mg/kg]

LD50(oral, rat)=1227[mg/kg]

local effects:

eye irritant

ethylbenzene

xylene

n-butanol

skin irritant

ethylbenzene

xylene

n-butanol  
sensitization:  
No data.  
chronically long term effect:  
xylene  
n-butanol  
specific effects  
carcinogenic:  
ethylbenzene  
Carcinogenic(IARC);Class:2B  
Carcinogenic(CLP)  
toxic for reproduction  
ethylbenzene  
Toxic for reproduction(CLP)  
xylene  
Toxic for reproduction(CLP)

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## 12 ECOLOGICAL INFORMATION

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For spills or waste, take care to avoid contaminating environment.  
Prevent spills and wastewater from entering sewers, water courses or low areas to avoid pollution.  
There are no data available on the product itself.

Ecological information of ingredients

acute toxicity n-butanol TLm24(goldenfish)=1900mg/L  
persistence ethylbenzene biodegradable:81-100%(2week/ )

Data are based on "Biological and Bioaccumulation Data of Existing Chemicals Based on the SCSL Japan" Compiled under the supervision of METI(MITI) Japan.

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Empty containers should be recycled or disposed of through an approved waste management facility.

It is strongly advised not to let the chemical enter into the environment.

It may be toxic or harmful to aquatic organisms.

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## 14 TRANSPORT INFORMATION

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UN regulation

UN Shipping name: FLAMMABLE LIQUID, N.O.S.

UN identification number: 1993

UN Class: class 3 Flammable liquids.

UN Packaging group: III

IMDG Class: class 3.3 High flashpoint group.

storage temperature Store below 40 deg.C.(104deg.F.).

See section 7, Handling and storage.

UN MARINE POLLUTANT

MARINE POLLUTANT. Paste the label of "MARINE POLLUTANT".

---

## 15 REGULATORY INFORMATION

---

The information on the SDS is based on the present state of our knowledge and on current EU laws.  
Please refer to any other national measures that may be relevant.

---

## 16 OTHER INFORMATION

---

R20:Harmful by inhalation

R36/38:Irritating to eyes and skin

R39/26/27/28:Very toxic-danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

R39/23/24/25:Toxic-danger of very serious irreversible effects by inhalation, in contact with skin and if swallowed.

R40:Possible risk of irreversible effects

R51/53:Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R60:May impair fertility

R61:May cause harm to the unborn child

S16:Keep away from sources of ignition -- No smoking

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