



WS104 FLEXIBLE EPOXY RESIN

MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION

1.1 Product identifier

Trade name	WS104 Flexible Epoxy Resin Part "A"
Chemical name	Bisphenol A Diglycidyl Ether Resin Solution

1.2 Recommended use of the product and restrictions on use

Recommended use	Industrial Use
Non- recommended use(s)	None known

1.3 Details of the supplier of the safety data sheet

Company	Weatherskin Corporation. Bay B 1120 44th Avenue SE Calgary, Alberta. Canada T2G 4W6
Telephone	403 656 9244
Toll Free	1 877 693 9224
Website	www.weatherskin.com

1.4 Emergency telephone number

Emergency In case of emergency call CANUTEC	613-996-6666
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2 HAZARD IDENTIFICATION

2.1 Classification of the mixture

Eye Irritant Category 2B

Skin Irritant

2.2 Label Elements

Signal word Warning

Hazard statement Causes eye irritation
Causes skin irritation
May cause an allergic skin reaction
Toxic to aquatic life with long lasting effects

Precautionary Statements Wear protective gloves/ protective clothing/ eye protection/ face protection
Use only outdoors or in a well-ventilated area
Avoid release to the environment

Symbols



3 COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances

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3.2 Mixtures

WS104 FLEXIBLE EPOXY - RESIN

CHEMICAL NAME	C.A.S.#	CONCENTRATION
Bisphenol A Diglycidyl Ether Resin	25068-38-06	75-95



4 FIRST AID MEASURES

EYE CONTACT

Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. If eye irritation persists: Get medical attention.

SKIN CONTACT

Wash with soap and water or use waterless hand cleaners. Do not use solvents or thinners to clean skin. Get medical attention if irritation persists.

INHALATION

Should symptoms develop, remove victim to fresh air. If breathing is difficult, qualified personnel may administer oxygen. If victim is not breathing start artificial respiration. Get medical attention.

INGESTION

Give liquids if victim is conscious. Never give anything by mouth to an unconscious person. Do not induce vomiting unless directed by a physician. Immediately call POISON CENTER/ Doctor.

5 FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Dry chemical, CO₂, water spray or regular foam.

Unsuitable extinguishing media

Full water jet, because this may spread the fire

5.2 Hazards

Flammable properties and hazards

Product is not considered a fire hazard. Containers can build up pressure if exposed to heat.

Hazardous combustion products

Hazardous decomposition products formed under fire conditions are carbon dioxide and carbon monoxide.

5.3 Fire-fighting instructions

Do not inhale combustion gases. Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.



6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures.

Use personal protective equipment. Wear chemical safety glasses, rubber boots and heavy rubber gloves. Ensure adequate ventilation.

6.2 Environmental precautions

Do not allow to enter drains, waterways, sewers, basements or confined areas.
Do not discharge into the subsoil / soil. Absorb spills with inert material and place in a chemical waste container.

7 HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid all personal contact. Use personal protective equipment. Use adequate ventilation.

7.2 Hygiene considerations

Wash hands before breaks and after work. Remove soiled or soaked clothing immediately. Wash contaminated clothes before reuse. Do not eat, drink or smoke when handling this product.

7.3 Safe storage procedures

Keep away from heat. Keep containers tightly closed in a dry well-ventilated place.



8 EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 EXPOSURE LIMITS

Hazardous Components (Chemical Name)	CAS#	OSHA PEL	ACGIH TLV	OTHER LIMIT
Bisphenol A Diglycidyl Ether Resin	25068-38-6	No data	No data	No data

8.2 EXPOSURE CONTROLS

ENGINEERING CONTROLS

Good general ventilation should be sufficient to control airborne levels.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Equipment	Normally when good engineering controls are used, no respiratory protection is needed.
Eye Protection	Use tightly fitting chemical splash goggles. Wear face protection wear as appropriate.
Hand Protection	Use impermeable gloves. Neoprene gloves.
Body Protection	Use impervious clothing and chemical resistant boots. Consider using resistant coveralls and aprons, if extensive exposure is possible.
Other Protective Equipment	Ensure that eyewash stations and safety showers are close to the workstation location.
General Hygiene Consideration	Do not breathe mist or vapor. Avoid all contact. Do not eat, drink, or smoke when using this product. Wash thoroughly after handling. Remove and wash contaminated clothing before re-use. Do not take contaminated clothes home.
Environmental Exposure Controls	Avoid runoff into storm sewers and ditches which lead to waterways. May be hazardous to the environment if released in large quantities.



9 PHYSICAL AND CHEMICAL PROPERTIES

Properties

Vapor Pressure	Not applicable
Vapor Density	Not applicable
Boiling Point	Not applicable
PH	Not applicable
Specific Gravity	1.0 – 1.2 g/ cm ³
Viscosity	2500 cP
VOC content	0
Evaporation rate	Slower than n-Butyl Acetate
Solubility in water	Negligible
Other properties	Clear, slightly yellow liquid

10 STABILITY AND REACTIVITY

Stability	Stable under normal conditions
Hazardous Polymerization	Will not occur under normal conditions
Conditions to avoid	High temperatures
Incompatibility with other materials	Oxidizing materials, acid, alkalis, peroxides.



11 TOXICOLOGICAL INFORMATION

11.1 Toxicological Information

May cause sensitization by skin contact.

11.2 Chronic Toxicological Effects

Skin sensitization.

11.3 Irritation or Corrosion

Skin irritation. Irritating to eyes.

11.4 Symptoms Related to Toxicological Characteristics

Skin irritation. Slight irritant to eyes.

12 ECOLOGICAL INFORMATION

12.1 General Ecological Information

Avoid release to the environment. Toxic to aquatic life with long lasting effects.

12.2 Ecotoxicity

Toxic to aquatic organisms (LC50 between 1 and 10 mg/L)

12.3 Persistence and Degradability

Not readily biodegradable.

12.4 Bioaccumulation Potential

No data available.

12.5 Mobility in Soil

Not reported, unknown.



13 DISPOSAL CONSIDERATIONS

Waste Disposal Method

Incinerate or dispose of unused material, residues and containers in a licensed facility in accordance with all applicable local, state, and federal regulations. Do not discharge substance/ product into sewage system.

14 TRANSPORTATION INFORMATION

14.1 Identification, UN number Not Regulated

14.2 Shipping Name Epoxy Resin

14.3. Hazard Class Not applicable

14.4 Packing Group Not applicable

Transport over land ADR/RID	Not regulated for transport
Transport over sea IMDG	Not regulated for transport
Transport over air ICAO/IATA	Not regulated for transport

15 OTHER INFORMATION

Waste Disposal Method

Preparation Date	June 2, 2017
SDS prepared by	Weatherskin Corp. 403 656 9244

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WS104 FLEXIBLE EPOXY HARDENER

MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION

1.1 Product identifier

Trade name	WS104 Flexible Epoxy Hardener Part "B": Accelerated
Chemical name	Blend of Phenols and Amines

1.2 Recommended use of the product and restrictions on use

Recommended use	Industrial Use
Non- recommended use(s)	None known

1.3 Details of the supplier of the safety data sheet

Company	Weatherskin Corporation. Bay B 1120 44th Avenue SE Calgary, Alberta. Canada T2G 4W6
Telephone	403 656 9244
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Website	www.weatherskin.com

1.4 Emergency telephone number

Emergency In case of emergency call CANUTEC	613-996-6666
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2. HAZARD IDENTIFICATION

2.1 Classification of the substance or mixture

Acute Toxicity Oral	Category 4
Acute Toxicity Dermal	Category 3
Skin Corrosion / Irritation	Category 1B
Eye Damage / Eye Irritation	Category 1
Acute Aquatic Toxicity	Category 3
Chronic Aquatic Toxicity	Category 2

2.2 Label Elements

Signal word	Danger
Hazard statement	Harmful if swallowed Toxic in contact with skin Causes severe skin burns and eye damage May cause an allergic skin reaction Harmful if inhaled May cause respiratory irritation Harmful to aquatic life with long lasting effects
Precautionary Statements	Wear protective gloves/ protective clothing/ eye protection/ face protection. Use only outdoors or in a well-ventilated area. Do not eat, drink, or smoke when using this product. Wash with plenty of water and soap thoroughly after handling. Avoid release to the environment. Avoid breathing fumes/ vapors/ spray.
Symbols	





3 COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

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3.2 Mixtures

WS104 / HARDENER

HAZARDOUS INGREDIENTS	C.A.S.#	WEIGHT %
Nonylphenol	84852153	30 - 70
Polyoxyalkyleneamine	90-46-100	10 - 40
Isophoronediamine	3236-53-1	10 - 40
N-Aminoethylpiperazine	140-31-8	5 - 25

4 FIRST AID MEASURES

EYE CONTACT	Small amounts splashed into the eyes can cause irreversible tissue damage and blindness. Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. If eye irritation persists: get medical attention. Continue rinsing eyes during transport to hospital. Protect unharmed eye. Keep eye wide open while rinsing.
SKIN CONTACT	If on skin or hair, take off immediately all contaminated clothing and shoes. Rinse skin, washing thoroughly with soap and water. Do not use solvents or thinners to clean skin. Get medical attention if irritation persists. Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
INHALATION	If unconscious place in recovery position and seek medical advice. If symptoms persist, call a physician.
INGESTION	Clean mouth with water and drink afterwards plenty of water. Keep respiratory tract clear. Never give anything by mouth to an unconscious person. Do not induce vomiting unless directed by a physician. Do not give milk or alcoholic beverages. Immediately call a POISON CENTER / Doctor.



5 FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Dry chemical, CO₂, water spray or regular foam.

Unsuitable extinguishing media

Full water jet, because this may spread the fire.

5.2 Hazards

Flammable properties and hazards

Product is not considered a fire hazard. Containers can build up pressure if exposed to heat.

Hazardous combustion products

Hazardous decomposition products formed under fire conditions are carbon dioxide, carbon monoxide, and nitrogen oxides. Phenol and other toxic vapors may be generated.

Specific hazards during fire-fighting

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

5.3 Fire-fighting instructions

Do not inhale combustion gases. Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures.

Use personal protective equipment. Wear chemical safety glasses, rubber boots and heavy rubber gloves. Ensure adequate ventilation. Prevent further leakage or spillage if safe to do so.

6.2 Environmental precautions

Do not allow to enter drains, waterways, sewers, basements or confined areas. Do not discharge into the subsoil / soil. Absorb spills with inert material and place in a chemical waste container. If the product contaminates rivers and lakes or drains inform the respective authorities.

6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material (e.g. sand, silica gel, universal binder, sawdust). Keep in suitable, closed containers for disposal.



7 HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid all personal contact. Use personal protective equipment. Use adequate ventilation. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator.

7.2 Hygiene considerations

Wash hands before breaks and after work. Remove soiled or soaked clothing immediately. Wash contaminated clothes before reuse. Do not eat, drink or smoke when handling this product. Remove contaminated clothing and protective equipment before entering eating areas.

7.3 Safe storage procedures

Keep away from heat. Keep containers tightly closed in a dry, well ventilated place. Empty containers retain product residue and can be hazardous.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 EXPOSURE LIMITS

Hazardous Components (Chemical Name)	CAS#	OSHA PEL	ACGIH TLV	OTHER LIMIT
Nonylphenol	84852153	No data	No data	No data
Polyoxyalkyleneamine	90-46-100	No data	No data	No data
Isophoronediamine	3236-53-1	No data	No data	No data
N-Aminoethylpiperazine	140-31-8	No data	No data	No data



8.2 EXPOSURE CONTROLS

ENGINEERING CONTROLS

Use local exhaust ventilation to maintain airborne concentrations at safe levels. Suitable respiratory equipment should be used in cases of insufficient ventilation or where demand it.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Equipment	Wear a NIOSH-certified (or equivalent) organic vapour and ammonia/ particulate respirator.
Eye Protection	Use tightly fitting chemical splash goggles. Wear face shield if splashing hazard exists.
Hand Protection	Use impermeable gloves. Neoprene or butyl-rubber gloves.
Body Protection	Use impervious clothing and chemical resistant boots. Consider using resistant coveralls and aprons, if extensive exposure is possible.
Other Protective Equipment	Ensure that eyewash stations and safety showers are close to the workstation location.
General Hygiene Consideration	Do not breathe mist or vapor. Avoid all contact. Do not eat, drink, or smoke when using this product. Wash thoroughly after handling. Remove and wash contaminated clothing before re-use. Do not take contaminated clothes home.
Environmental Exposure Controls	Avoid runoff into storm sewers and ditches which lead to waterways. May be hazardous to the environment if released in large quantities.



9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical State	Liquid (oily liquid).
Color	Clear, slightly yellow.
Odor	Ammonia-like.

Properties

Boiling Point	Not applicable
Melting Point	Not available
Flash Point	Not available
pH	10
Specific Gravity	1.0 - 1.2 g/ cm ³
Viscosity	2500 cP
VOC content	0
Evaporation rate	Slower than n-Butyl Acetate
Solubility in water	Negligible
Vapour pressure	Not applicable
Vapour density	Not applicable



10 STABILITY AND REACTIVITY

Chemical Stability	Stable under normal conditions
Hazardous Polymerization	Will not occur under normal conditions
Conditions to avoid	High temperatures, direct sunlight.
Incompatible Materials	Strong oxidizing agents, acids, halogenated compounds, ammonia, carbon monoxide, carbon dioxide, aldehydes, ketones. Reacts also with copper, aluminum, zinc, and their alloys.
Hazardous decomposition products	Carbon dioxide, carbon monoxide, nitrogen oxides.

11 TOXICOLOGICAL INFORMATION

11.1 Acute Toxicity

Ingredient Name	Test	Species	Result	Exposure
Nonyl Phenol	LD50 Dermal	Rabbit	2140 mg/kg	
	LD50 Oral	Rat	580 mg/kg	
	Sub-acute NOAEL Oral	Rat	100 mg/kg	28 days
	Sub-acute NOAEL Oral	Rat	50 mg/kg	28 days
Polyoxyalkyleneamine	LD50 Dermal	Rabbit	2980 mg/kg	
	LD50 Oral	Rat	2885 mg/kg	
Isophoronediamine	LD50 Oral	Rat	1030 mg/kg	
	Dermal		No data available	
N-Aminoethylpiperazine	LD50 Oral	Rat	2000 - 5000 mg/kg	
	LD50 Dermal	Rabbit	200 - 1000 mg/kg	



11.2 Skin Corrosion and / or Irritation

Nonylphenol	Corrosive to the skin. Causes burns.
Polyoxyalkyleneamine	Corrosive to the skin. Causes burns.
Isophoronediamine	Corrosive to the skin.
N-Aminoethylpiperazine	Symptoms may be delayed. Toxic in contact with skin. May cause an allergic skin reaction. Causes severe skin burns.

11.3 Eye Damage or Irritation

Nonylphenol	
Polyoxyalkyleneamine	Corrosive to eyes. Causes burns.
Isophoronediamine	Species: Rabbit. Result: Risk of serious damage to eyes. Method: OECD guideline 405.
N-Aminoethylpiperazine	Causes serious eye damage.

11.4 Respiratory and Skin Sensitization

Nonylphenol	Route: Skin. Species: Guinea pig. Result: Not sensitizing.
Polyoxyalkyleneamine	Route: Skin. Species: Guinea pig. Result: Not sensitizing.
Isophoronediamine	Guinea pig sensitization test. Species: Guinea pig. Result: Sensitizing. Method: OECD guideline 406.
N-Aminoethylpiperazine	May cause sensitization by skin contact.



11.5 Germ Cell Mutagenicity

Nonylphenol	Test: OECD 476 in vitro Mammalian cell gene Mutation test Experiment: In vitro. Subject: Mammalian animal Metabolic activation:+/-. Result: Negative.
Polyoxyalkyleneamine	No known significant effects or critical hazards.
Isophoronediamine	Experimental/ calculated data: Ames-test. No mutagenic effects reported. Micronucleus assay: No mutagenic effects reported.
N-Aminoethylpiperazine	Genotoxicity in vitro: Ames test result: Negative. Genotoxicity in vivo: Result: No evidence of genotoxic effects in vivo.

11.6 Carcinogenicity

For the ingredients in this product, no known significant effects or critical hazards.

11.7 Reproductive Toxicity

No known significant effects or critical hazards

11.8 Specific Target Organs Effect

May cause damage to the kidneys.

11.9 Aspiration Hazards

No aspiration hazard expected.



12 ECOLOGICAL INFORMATION

12.1 Environmental Effects

Very toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment. It is biodegradable, but has a lot of potential for bioaccumulation. Water polluting material. May be harmful to the environment if released in large quantities.

12.2 Aquatic Ecotoxicity

Substance	Test	Result	Species	Exposure
Nonylphenol		Acute EbC50 (biomass) 0.0563 mg/L Fresh water	Algae	72 hours Static
		Acute EC50 0.085 mg/L Fresh water	Daphnia	48 hours Static
		Chronic EbC10 0.0033 mg/L Fresh water	Algae	72 hours Static
		Chronic NOEC 0.0047 mg/L Fresh water	Fish	33 days
		Chronic NOEC 0.024 mg/L Fresh water	Daphnia	21 days Semistatic
Polyoxyalkyleneamine		Acute LC50 > 220 mg/L	Fish	96 hours
Isophoronediamine	Acute. Directive 84/449/EEC	LC50: 110 mg/L	Leuciscus idus	96 hours Semistatic
	Chronic	Study scientifically not justified	Fish	
	Acute OECD Guideline 202	EC50: 23 mg/L	Daphnia magna	48 hours Static



Substance	Test	Result	Species	Exposure
N-Aminoethylpiperazine		EC50: 288 mg/L	Chaetogammarus marinus	48 hours Semistatic
	Chronic Directive: OECD Guideline 202	NOEC: 3 mg/L	Daphnia magna	21 days
	Directive 88/301/EEC	EC50 > 50 mg/L	Green Algae	72 hours
	DIN 28412	EC10: 1120 mg/L	Bacterium	18 hours
		LC50 > 100 mg/L	Pimephales prometas (fathead minnow)	96 hours
		EC50 > 10-100 mg/L	Daphnia magna (water flea)	48 hours
		EC50 > 100 mg/L	Pseudokirchneriella subcapitata (green algae)	72 hours

12.3 Persistence and Degradability

Substance	Result	Method	Dose
Nonylphenol	62% inherent - 28 days	OECD Ready Biodegradability Manometric Respirometry test	31 mg/L Oxygen consumption
	53% inherent 28 days	OECD 301B Ready Biodegradability CO2 Evolution Test	12.2 mg/L Carbon dioxide production
Polyoxyalkyleneamine	7.23% inherent 28 days	OECD 301B Biodegradability - CO2 Evolution Test	Inoculum: Activated Sludge
Isophoronediamine	Not readily biodegradable by OECD Criteria	Directive 92/69 EEC, C.4-A (aerobic) DOC Reduction	Degree of elimination 8% (28 days)
N-Aminoethylpiperazine	Not readily Biodegradable	OECD Test Guideline 301D	



12.4 Bioaccumulation

Nonylphenol	LogPow: 3.8 to 4.77	Potential: High
Polyoxyalkyleneamine	No data available	
Isophoronediamine	Based on the Log Pow	Accumulation in organisms is not to be expected
N-Aminoethylpiperazine	No data available	

12.5 Mobility in Soil

Nonylphenol	No data available
Polyoxyalkyleneamine	No data available
Isophoronediamine	Transport between environmental compartments: Calculated Absorption/ water - soil KOC: 928 log KOC: 2.97
N-Aminoethylpiperazine	No data available

12.6 Other Adverse Effects

Isophorenediamine	Due to the pH-value of the product, neutralization is generally required before discharging sewage into treatment plants. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.
N-Aminoethylpiperazine	Biochemical Oxygen Demand (BOD) < 60% BOD, 28 days, Closed Bottle Test (OECD 301D)



13 DISPOSAL CONSIDERATIONS

Waste Disposal Method

Incinerate or dispose of unused material, residues and containers in a licensed facility in accordance with all applicable local, state, and federal regulations. Do not discharge substance/ product into sewage system. Do not contaminate pond, waterways or ditches with chemical or used container. The product should not be allowed to enter drains, water courses, or the soil.

14 TRANSPORTATION INFORMATION

14.1 Identification, UN number	UN 2735
14.2 Shipping Name	Amines Liquid, Corrosive, N.O.S.
14.3. Hazard Class	8
14.4 Packing Group	III

15 OTHER INFORMATION

Waste Disposal Method

Preparation Date	June 2, 2017
MSDS prepared by	Weatherskin Corp. 403 656 9244

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