



SAFETY DATA SHEET

LOCKWELL P590 SIDE-B RESIN

Section 1.0 – Identification Of Material And Supplier

Product Name : Lockwell P590 Side B – Resin
Proper Shipping Name : Amines, liquid, corrosive, n.o.s. (contains polyoxypropylenediamine)
Recommended use : Component of a Polyurea System
Suppliers Name : Lockwell Systems Co., Ltd.
199/5 Moo.21, Soi Chongsiri Parkland
T.Bangphleeyai, A.Bangplee, Samutprakarn 10540, Thailand
Country of Origin : Thailand
Phone Number : +662 136 3868
Date of Preparation : 1 April 2015

Section 2.0 – Hazards Identification

HSNO Classification: HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

This material is classified as hazardous according to Australian criteria.

Classified as Dangerous goods for the purpose of transport by road, rail, sea or air. Refer to relevant regulations for storage and transport requirements.

Class: Class 8: Corrosive material

Classified as C1 (COMBUSTIBLE LIQUID) for the purpose of storage and handling, in accordance with the requirements of AS 1940. Refer to State Regulations for storage and transport requirements.

Risk phrase(s): R21/22 – Harmful in contact with skin and if swallowed.
R48/22 – Harmful: danger of serious damage to health by prolonged exposure if swallowed.
R34 – Causes burns.
R50/53 – Very toxic to aquatic organisms, may cause long-term adverse effect in the aquatic environment.

Safety phrase(s): S26 – In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37/39 – Wear suitable protective clothing, gloves and eye/face protection.
S45 – In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S61 – Avoid release to the environment. Refer to special instructions/safety data sheet.

Poison schedule (Australia): None allocated.

Section 3.0 – Composition / Information on Ingredients

Physical state : Liquid

Colour/Appearance :

Ingredient name	%	CAS number
Diethyltoluenediamine	10-<30	9046-10-0
Poly[oxy(methyl-1,2-ethanediyl)], alpha-(2-aminomethylethyl)-.omega-(2-aminomethylethoxy)-	10-<30	
Other ingredients determined not to be hazardous	to 100	

Section 4.0 – First Aid Measures**EMERGENCY & FIRST AID PROCEDURES****Eye Contact:**

Get medical attention immediately. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

Skin Contact:

Get medical attention immediately. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before re-use. Clean shoes thoroughly before re-use.

Inhalation:

Get medical attention immediately. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Ingestion:

Get medical attention immediately. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recover position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Note to physician:

In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 13 1126; New Zealand 0800 764 766.

Section 5.0 – Fire Fighting Measures**Extinguishing media:**

Use dry chemical, CO₂, water spray (fog) or foam.

Hazardous combustion products:

Decomposition products may include the following materials:
Carbon dioxide, carbon monoxide, nitrogen oxides.

Special protective equipment for fire-fighters:

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Precautions for fire-fighters:

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. This material is very toxic to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

In a fire or if heated, a pressure increase will occur and the container may burst.

Hazchem code: 2X

Section 6.0 – Accidental Release Measure**SPILLS AND DISPOSAL****Emergency procedures:**

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and clean-up procedures:**Large spill**

Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material eg sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: See section 1 for emergency contact information and section 13 for waste disposal.

Small spill

Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Section 7.0 – Handling and Storage**Precautions for safe handling:**

Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. Refer to special instructions/safety data sheet. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Precautions for safe storage:

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Classified as a C1 (COMBUSTIBLE LIQUID) for the purpose of storage and handling, in accordance with the requirements of AS 1940. Refer to State Regulations for storage and transport requirements.

Section 8.0 – Exposure Controls / Personal Protection**National exposure standards:**

No value assigned to this material by the Australian regulatory authority.

Biological limit values:

No biological limit allocated.

Engineering controls:

If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Personal protective equipment:**Eyes:**

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

Refer to Australian/New Zealand Standard AS/NZS 1337:1992 for guidance on selection and use of protective eyewear.

Hands:

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Refer to Australian/New Zealand Standard AS/NZS 2161.1:2000 for guidance on selection and use of protective gloves.

Respiratory:

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Refer to Australian/New Zealand Standard AS/NZS 1715 and AS/NZS 1716 for guidance on selection and use of respiratory devices.

Skin:

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 9.0 – Physical and Chemical Properties

Appearance & Odour	: Liquid. Other information not available
Boiling Point	: Not available
Vapour Pressure	: Not available
Specific Gravity	: Not available
Flash Point	: Closed cup: >116°C
% Volatile by Volume	: Not available
Flammability Limits	: Not available
Solubility in Water	: Not available
Viscosity	: Dynamic: 840 to 980 mPa's

Section 10.0 – Stability and Reactivity

Chemical Stability	: The product is stable
Conditions to avoid	: No specific data
Materials to avoid	: Reactive or incompatible with the following materials: acids
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous Reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.

Section 11.0 – Toxicology Information**Potential acute health effects**

Skin contact	: Corrosive to the skin. Causes burns. Harmful in contact with skin.
Eye contact	: Corrosive to eyes. Causes burns.
Ingestion	: Harmful if swallowed. May cause burns to mouth, throat and stomach.

Inhalation : May give off gas, vapour or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Acute Toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Diethyltoluenediamine	LD50 Dermal LD50 Oral	Rat – Male, Female Rat – Male, Female	>2000 mg/kg 738 mg/kg	-
Poly[oxy(methyl-1,2-ethanediy)], Alpha.-(2-aminomethylethyl)-.omega.- (2-aminomethylethoxy)-	LD50 Dermal LD50 Oral	Rabbit Rat	2090 mg/kg 480 mg/kg	- -

Potential chronic health effects:
Chronic Toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Diethyltoluenediamine	Sub-chronic NOAEL Dermal	Rabbit – Male Female	>100 mg/kg/d	3 weeks; 5 days per week
	Sub-chronic NOAEL Oral	Rat – Male Female	21 to 27 mg/kg	90 days

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Diethyltoluenediamine	Negative – Oral – LOAEL	Rat – Male, Female	1.8 to 3.2 mg/kg	24 months; 7 days per week

Mutagenicity

Product/ingredient name	Test	Experiment	Result
Diethyltoluenediamine	OECD 476 In vitro Mammalian Cell Gene Mutation Test	Experiment: In vitro Subject: Mammalian-Animal Metabolic activation: +	Positive
	OECD 476 In vitro Mammalian Cell Gene Mutation Test	Experiment: In vitro Subject: Mammalian-Animal	Negative
	OECD 474 Mammalian Erythrocyte Micronucleus Test	Experiment: In vivo Subject: mammalian-Animal	Negative

Chronic effects : Harmful – danger of serious damage to health by prolonged exposure if swallowed.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Inhalation : No specific data.
Ingestion : Adverse symptoms may include the following:
 stomach pains

- Skin** : Adverse symptoms may include the following:
 pain or irritation
 redness
 blistering
- Eyes** : Adverse symptoms may include the following:
 pain
 watering
 redness
- Target organs** : Contains material which may cause damage to the following organs:
 liver, peripheral nervous system, pancreas, thyroid

Section 12.0 – Ecological Information
Environmental effects:

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Water polluting material. May be harmful to the environment if released in large quantities.

Aquatic Ecotoxicity

Product/ingredient name	Test	Result	Species	Exposure
Diethyltoluenediamine	Unknown guidelines	Acute EC50 >170 mg/L Fresh water	Bacteria	24 hours static
	EU EC C.2 Acute Toxicity for Daphnia	Acute EC50 0.5 mg/L Fresh water	Daphnia	48 hours static
	OECD 201 Alga, Growth inhibition Test	Acute ErC50 (growth rate) 104 mg/L Fresh water	Algae	72 hours static
	DIN DIN 38412 Part 15	Acute LC50 200 mg/L Fresh water	Fish	48 hours static
	Unknown Guidelines	Chronic EC10 170 mg/L Fresh water	Bacteria	24 hours static

Product/ingredient name	Test	Result	Species	Exposure
Diethyltoluenediamine	OECD 201 Alga, Growth Inhibition Test	Chronic NOECr 32 mg/L Fresh water	Algae	72 hours static
Poly[oxy(methyl-1,2-ethanediyl)], alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-	-	Acute EC50 15 mg/L	Daphnia	48 hours static
	-	Acute IC50 135 mg/L	Algae	72 hours static
	-	Acute LC50 >100 mg/L	Fish	96 hours static

Conclusion/Summary : Not available

Biodegradability

Product/ingredient name	Test	Result	Dose	Inoculum
Diethyltoluenediamine	No official guidelines	<60 % - Not readily – 28 days	-	-

Conclusion/Summary : Not available

Product/Ingredient name	Aquatic half-life	Photolysis	Biodegradability
Diethylmethylbenzenediamine	-	-	Not readily

Bioaccumulative Potential

Product/Ingredient Name	LogP _{ow}	BCF	Potential
Diethylmethylenediamine	1.17	13.82	Low

Mobility : Not available

Other adverse effects: No known significant effects or critical hazards

Section 13.0 – Disposal Considerations

Methods of disposal:

The generation of waste should be avoided or minimised wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spill material and runoff and contact with soil, waterways, drains and sewers.

Section 14.0 – Transportation Information

Road and rail transport:







Classified as dangerous goods by the criteria of the Australian Dangerous Goods (ADG) Code for transport by road and rail.

Marine transport:

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

Air transport:

Classified as dangerous goods by the criteria of the International Air Transport Association (IATA) Code for transport by air.

Regulation	UN number	Proper shipping name	Classes	PG*	Label	Additional Information
ADG	UN2731	Amines, liquid, corrosive, n.o.s. (contains polyoxypropylenediamine)	8	III	 	Hazchem Code 2X
IMDG	UN2735	Amines, liquid, corrosive, n.o.s. Polyoxypropylenediamine	8	III	 	Emergency schedules (EmS) F-A, S-B
IATA	UN2735	Amines, liquid, corrosive, n.o.s. Polyoxypropylenediamine	8	III	 	Passenger and Cargo Aircraft Quantity Limitation: 5 L Packaging instructions: 852 Cargo Aircraft Only Quantity limitation: 60 L Packaging instructions: 856

PG*: Packaging Group



SAFETY DATA SHEET

LOCKWELL P590 SIDE-B RESIN

Section 15.0 – Regulatory Information

Inventory status

Country	Inventory	Status
Australia	AICS	All components are listed or exempted.
Canada	DSL	All components are listed or exempted.
China	IECSC	All components are listed or exempted.
Europe	EINECS/ELINCS/NLP	All components are listed or exempted.
Japan	ENCS	All components are listed or exempted.
Korea	KECI	All components are listed or exempted.
New Zealand	NZIoC	All components are listed or exempted.
Philippines	PICCS	All components are listed or exempted.
United States	TSCA	All components are listed or exempted.

Carcinogen schedule (Australia) : None allocated.

Poison schedule (Australia) : None allocated.

Section 16.0 – Other Information

Disclaimer

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

While the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

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