

Add sufficient cold water to the storage container to bring the final volume up to 1000 ml. Cap the storage container and wash the outside of the container before removing it from the sink.

LIFE OF THE SOLUTIONS

Stock Solution A has a shelf life of about 6 months in a full and tightly-capped bottle. Solution B will have an indefinite life if stored in a filled plastic container. When opened, the sodium hydroxide will absorb atmospheric carbon dioxide and lose its potency. Depending upon the frequency of exposure, the actual shelf life can be considered to be from 1 to 6 months.

USING THE DEVELOPER:

Mixing the working solution is as follows:

Sulfite	Amount
Solution A	25 ml
Solution B	15 ml
Distilled water (20° C/68° F)	1000 ml

A typical developing sequence is:

Develop:	10-15 minutes with agitation every other 20 seconds.
Stop:	30 seconds (a water rinse may be desirable between the developer and the stop to prevent reticulation.)
Fix:	2-4 minutes in Formulary TF-4 Archival Rapid Fix. (cat. no. 03-0141)
Wash:	30 seconds in running water
Clear:	2 minutes in Formulary Hypo Clear Agent (cat. no. 03-0165)
Wash:	5 minutes in running water.



F PHOTOGRAPHERS'
FORMULARY INC.

PO Box 950 • Condon MT 59826 • 406-754-2891 • FAX 406-754-2896
E-MAIL formulary@montana.com

CATALOG NUMBER 01-0105

F PHOTOGRAPHERS' FORMULARY

FORMULARY MODIFIED WINDISCH FILM DEVELOPER

TO MAKE 40 LITERS OF WORKING SOLUTION

This formula was suggested to us by Mr. William Troop who, in his experiments with Windisch Pyrocatechin developer, reversed the proportions of sodium sulfite and catechol (pyrocatechin). The resulting super compensating developer works well with Kodak Technical Pan film and yields negatives that can record a range of 7 to 10 stops. For use with this developer, Technical Pan film should be exposed somewhere between 32-64 ASA.

Catechol (pyrocatechin), a tanning developer, stains (actually fogs) the negative and also hardens the emulsion, protecting it from reticulation. The negatives, however, have a brown color and look dark, even at the edges. This is the normal appearance of negatives developed in catechol

Modified Windisch Film Developer was formulated for use on Technical Pan film and may not be satisfactory with other films. If you wish to use this developer on films other than Technical Pan, we recommend you first test it with scrap film.

CHEMICALS CONTAINED IN THIS KIT

Your kit contains the following chemicals:

CHEMICAL	AMOUNT
Sodium sulfite	80.0 g
Catechol (pyrocatechin)	12.5 g
Sodium hydroxide	100.0 g

FOR YOUR CHEMICAL SAFETY:

All chemicals are dangerous and must be treated with respect. Please read the warning label on each package. There are two chemicals in this kit that need special attention.

MODIFIED WINDISCH
DEVELOPER

PHOTOGRAPHERS'
FORMULARY

PAGE 1
CAT. NO. 01-0105



Material Safety Data Sheet

Creation Date 20-Jan-2010

Revision Date 20-Jan-2010

Revision Number 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Sodium sulfite anhydrous
Cat No.	BP355-500; S430-3; S430-10; S430-500; S447-3; S447-500
Synonyms	Disodium sulfite; Sulfurous acid, disodium salt (Crystalline/Powder/Certified ACS/Low Phosphate)
Recommended Use	Laboratory chemicals
Company	Emergency Telephone Number
Fisher Scientific	CHEMTREC®, Inside the USA: 800-424-9300
One Reagent Lane	CHEMTREC®, Outside the USA: 703-527-3887
Fair Lawn, NJ 07410	
Tel: (201) 796-7100	

2. HAZARDS IDENTIFICATION

WARNING!

Emergency Overview

Contact with acids liberates toxic gas. May cause eye, skin, and respiratory tract irritation . May cause central nervous system effects.

Appearance Off-white

Physical State Solid

odor odorless

Target Organs Central nervous system (CNS)

Potential Health Effects

Acute Effects

Principle Routes of Exposure

Eyes

May cause irritation.

Skin

May cause irritation. May be harmful in contact with skin.

Inhalation

May cause irritation of respiratory tract. May be harmful if inhaled.

Ingestion

May be harmful if swallowed. May cause central nervous system effects. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic Effects

Mutagenic effects have occurred in experimental animals..

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Haz/Non-haz

Component	CAS-No	Weight %
Sodium sulfite	7757-83-7	97

4. FIRST AID MEASURES

Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.
Inhalation	Move to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately if symptoms occur.
Ingestion	Do not induce vomiting. Obtain medical attention.
Notes to Physician	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash Point	No information available.
Method	No information available.
Autoignition Temperature	No information available.
Explosion Limits	
Upper	No data available
Lower	No data available
Suitable Extinguishing Media	Substance is nonflammable; use agent most appropriate to extinguish surrounding fire..
Unsuitable Extinguishing Media	No information available.
Hazardous Combustion Products	No information available.
Sensitivity to mechanical impact	No information available.
Sensitivity to static discharge	No information available.

Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

NFPA **Health** 1 **Flammability** 0 **Instability** 1 **Physical hazards** N/A

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Use personal protective equipment. Ensure adequate ventilation. Avoid dust formation. Avoid contact with skin, eyes and clothing.
Environmental Precautions	Should not be released into the environment.
Methods for Containment and Clean Up	Avoid dust formation. Sweep up or vacuum up spillage and collect in suitable container for disposal.

7. HANDLING AND STORAGE

Handling	Wear personal protective equipment. Ensure adequate ventilation. Avoid dust formation. Do not breathe dust. Avoid contact with skin, eyes and clothing. Keep away from acids.
Storage	Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store near acids.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Measures	Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.
Exposure Guidelines	This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

NIOSH IDLH: Immediately Dangerous to Life or Health

Personal Protective Equipment

Eye/face Protection

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure

Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Off-white
odor	odorless
Odor Threshold	No information available.
pH	8.5-10 5% aq.sol.
Vapor Pressure	No information available.
Vapor Density	No information available.
Viscosity	No information available.
Boiling Point/Range	No information available.
Melting Point/Range	>500°C / 932°F
Decomposition temperature °C	500
Flash Point	No information available.
Evaporation Rate	No information available.
Specific Gravity	2.630
Solubility	Partly soluble in water
log Pow	No data available

9. PHYSICAL AND CHEMICAL PROPERTIES

Molecular Weight 126.04
Molecular Formula Na₂SO₃

10. STABILITY AND REACTIVITY

Stability Air sensitive. Moisture sensitive.

Conditions to Avoid Incompatible products. Excess heat. Exposure to air. Exposure to moisture.

Incompatible Materials Strong oxidizing agents, Acids

Hazardous Decomposition Products Sulfur oxides, Sodium oxides

Hazardous Polymerization Hazardous polymerization does not occur

Hazardous Reactions . Contact with acids liberates toxic gas.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium sulfite	820 mg/kg (Rat)	Not listed	22 mg/L (Rat) 1 h 5.5 mg/L (Rat) 4 h

Irritation No information available.

Toxicologically Synergistic Products No information available.

Chronic Toxicity

Carcinogenicity There are no known carcinogenic chemicals in this product

Sensitization No information available.

Mutagenic Effects Mutagenic effects have occurred in experimental animals.

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

Other Adverse Effects See actual entry in RTECS for complete information.

Endocrine Disruptor Information No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Sodium sulfite	Not listed	Not listed	EC50 = 770 mg/L 17 h	LC50 24 h 330 mg/L

Persistence and Degradability No information available

Bioaccumulation/ Accumulation No information available

Mobility

Component	log Pow
Sodium sulfite	-4

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification

14. TRANSPORT INFORMATION

DOT Not regulated

TDG Not regulated

IATA Not regulated

IMDG/IMO Not regulated

15. REGULATORY INFORMATION

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
Sodium sulfite	X	X	-	231-821-4	-		X	X	X	X	KE-31612 X

Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations**TSCA 12(b)** Not applicable**SARA 313**

Not applicable

SARA 311/312 Hazardous Categorization

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Not applicable

Clean Air Act

Not applicable

OSHA

Not applicable

CERCLA

Not Applicable

California Proposition 65

This product does not contain any Proposition 65 chemicals.

State Right-to-Know

Not applicable

U.S. Department of Transportation

Reportable Quantity (RQ):	N
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class

Non-controlled

16. OTHER INFORMATION

Prepared By Regulatory Affairs
Thermo Fisher Scientific
Tel: (412) 490-8929

Creation Date 20-Jan-2010

Print Date 20-Jan-2010

Revision Summary "****", and red text indicates revision

Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of MSDS



The Power to Question

SAFETY DATA SHEET

Santa Cruz Biotechnology, Inc.

Revision date 17-Feb-2015

Version 1

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

Product identifier

Product Name Pyrocatechol
Product Code SC-215763

Recommended use of the chemical and restrictions on use

For research use only. Not intended for diagnostic or therapeutic use.

Details of the supplier of the safety data sheet

Santa Cruz Biotechnology, Inc.
10410 Finnell Street
Dallas, TX 75220
831.457.3800
800.457.3801
scbt@scbt.com

Emergency telephone number

Chemtrec
1.800.424.9300 (Within USA)
+1.703.527.3887 (Outside USA)

2. HAZARDS IDENTIFICATION

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification

Acute toxicity - Oral Category 4
Acute toxicity - Dermal Category 4
Acute toxicity - Inhalation (Dusts/Mists) Category 4
Skin corrosion/irritation Category 2
Serious eye damage/eye irritation Category 2
Skin sensitization Category 1
Germ Cell Mutagenicity Category 2
Carcinogenicity Category 2

Label elements

Signal word Warning
Hazard statements HARMFUL IF SWALLOWED
Harmful in contact with skin
HARMFUL IF INHALED
Causes skin irritation
Causes serious eye irritation
May cause an allergic skin reaction
Suspected of causing genetic defects
Suspected of causing cancer

Symbols/Pictograms





Precautionary Statements - Prevention

Obtain special instructions before use
 Do not handle until all safety precautions have been read and understood
 Use personal protective equipment as required
 Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Avoid breathing dust/fume/gas/mist/vapors/spray
 Use only outdoors or in a well-ventilated area
 Contaminated work clothing should not be allowed out of the workplace
 Wear protective gloves

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 If eye irritation persists: Get medical advice/attention
 IF ON SKIN: Wash with plenty of soap and water
 Call a POISON CENTER or doctor/physician if you feel unwell
 Take off contaminated clothing and wash before reuse
 If skin irritation or rash occurs: Get medical advice/attention
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
 Rinse mouth
 Store locked up
 Dispose of contents/container to an approved waste disposal plant

Precautionary Statements - Storage
 Precautionary Statements - Disposal

Hazards not otherwise classified (HNOC)

Hazards not otherwise classified (HNOC) Not applicable

Other Information

Other hazards Toxic to aquatic life with long lasting effects.

NFPA	Health hazards	2		HMIS	Health hazards	2
	Flammability	1			Flammability	1
	Stability	0			Physical hazards	0
	Physical and chemical properties	-			Personal protection	-

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS No 120-80-9
 Molecular Weight 110.11
 Formula C₆H₆O₂

Chemical Name	CAS No	Weight %	Oral LD50	Dermal LD50	Inhalation LC50
Pyrocatechol	120-80-9	>98	= 260 mg/kg (Rat)	= 800 mg/kg (Rabbit)	-

4. FIRST AID MEASURES

First Aid Measures

General advice If symptoms persist, call a physician. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing.



Eye contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.
Skin Contact	Consult a physician if necessary. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before reuse. Wash off immediately with plenty of water. If skin irritation persists, call a physician. Immediate medical attention is not required.
Inhalation	Remove to fresh air Call a physician If breathing is irregular or stopped, administer artificial respiration Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation Immediate medical attention is not required Move to fresh air in case of accidental inhalation of vapors If symptoms persist, call a physician
Ingestion	Rinse mouth. Drink plenty of water. If symptoms persist, call a physician. Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician.
Self-protection of the first aider	Use personal protective equipment as required.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media None.

Specific hazards arising from the chemical

Specific hazards arising from the chemical No information available.

Hazardous combustion products Carbon oxides.

Explosion data

Sensitivity to Mechanical Impact No information available.

Sensitivity to Static Discharge No information available.

Protective equipment and precautions for firefighters

Protective equipment and precautions for firefighters As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental precautions

Environmental precautions Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.



Methods for cleaning up

Use personal protective equipment as required. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. Take up mechanically, placing in appropriate containers for disposal. Avoid creating dust. Clean contaminated surface thoroughly. Soak up with inert absorbent material. Dam up. Pick up and transfer to properly labeled containers. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water. Take precautionary measures against static discharges.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling

Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wash contaminated clothing before reuse. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Use with local exhaust ventilation.

Conditions for safe storage, including any incompatibilities

Storage Conditions

Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers. Store at room temperature.

Incompatible materials

None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Other Information

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Pyrocatechol 120-80-9	TWA: 5 ppm S*	(vacated) TWA: 5 ppm (vacated) TWA: 20 mg/m ³ (vacated) S*	TWA: 5 ppm TWA: 20 mg/m ³

NIOSH IDLH *Immediately Dangerous to Life or Health*

Appropriate engineering controls

Engineering Controls

Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection

Tight sealing safety goggles. Face protection shield.

Skin and Body Protection

Wear protective gloves and protective clothing.

Respiratory protection

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations

When using do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State

Solid

Appearance

powder

Odor

No information available



Property	Values
pH	No information available
Melting point/freezing point	100 °C
Boiling point	245 °C
Flash point	127 °C CC (closed cup)
Density	1.34 g/cm ³
Evaporation rate	No information available
Upper flammability limits	No information available
Lower flammability limit	1.97%
Vapor pressure	10
Vapor density	No information available
Specific gravity	No information available
Water solubility	No information available
Solubility in other solvents	No information available
Partition coefficient	0.88
Autoignition temperature	510 °C
Decomposition temperature	No information available
Kinematic viscosity	No information available
Explosive properties	No information available
Oxidizing properties	No information available

10. STABILITY AND REACTIVITY

Reactivity	Not applicable
Chemical stability	Stable under recommended storage conditions.
Possibility of Hazardous Reactions	None under normal processing.
Hazardous polymerization	No information available.
Conditions to avoid	Extremes of temperature and direct sunlight.
Incompatible materials	Strong oxidizing agents.
Hazardous Decomposition Products	Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation	No data available.
Eye contact	No data available.
Skin Contact	No data available.
Ingestion	No data available.

Information on toxicological effects

Symptoms	No information available.
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Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity	Avoid repeated exposure.
Target Organ Effects	Central nervous system, Eyes, Respiratory system, Kidney, Skin.
Carcinogenicity	The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Pyrocatechol 120-80-9	A3	Group 2B	-	X

ACGIH (American Conference of Governmental Industrial Hygienists) A3 - Animal Carcinogen

IARC (International Agency for Research on Cancer) Group 2B - Possibly Carcinogenic to Humans

OSHA (Occupational Safety and Health Administration of the US Department of Labor) X - Present

Numerical measures of toxicity - Product Information

Unknown acute toxicity	No information available
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The following values are calculated based on chapter 3.1 of the GHS document



ATEmix (oral)	500 mg/kg
ATEmix (dermal)	1100 mg/kg
ATEmix (inhalation-dust/mist)	1.5 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity Toxic to aquatic life with long lasting effects

Chemical Name	Algae/aquatic plants	Fish	Toxicity to Microorganisms	Crustacea
Pyrocatechol 120-80-9	-	8.9: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 3.5: 96 h Pimephales promelas mg/L LC50 flow-through	-	1.66: 48 h Daphnia magna mg/L EC50

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Persistence and degradability	No information available.
Bioaccumulation	No information available.
Mobility	No information available.

Chemical Name	Partition coefficient
Pyrocatechol 120-80-9	0.88

13. DISPOSAL CONSIDERATIONS

Disposal of wastes	Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated packaging	Do not reuse container.
Other Information	Waste codes should be assigned by the user based on the application for which the product was used.

14. TRANSPORT INFORMATION

DOT

UN/ID no	UN2811
Hazard Class	6.1
Packing Group	III
Proper shipping name	Poisonous solid, organic, n.o.s
Description	UN2811, Poisonous solid, organic, n.o.s (<TND>), 6.1, III
Emergency Response Guide Number	154

IMDG

UN/ID no	UN2811
Hazard Class	6.1
Packing Group	III
Proper shipping name	Toxic solid, organic, n.o.s.
Description	UN2811, Toxic solid, organic, n.o.s., 6.1, III
Special Provisions	223, 274
EmS-No	F-A, S-A

IATA



UN/ID no	UN2811
Hazard Class	6.1
Packing Group	III
Proper shipping name	Toxic solid, organic, n.o.s.*
Description	UN2811, Toxic solid, organic, n.o.s.*, 6.1, III

15. REGULATORY INFORMATION

International Inventories

All of the components in the product are on the following Inventory lists

TSCA (United States): Canada (DSL/NDSL) Europe (EINECS/ELINCS/NLP) Australia (AICS) South Korea (KECL): China (IECSC)
ENCS (Japan): Philippines (PICCS)

Chemical Name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Pyrocatechol	X	X	-	X	-	X	X	X	X	X

X - Listed

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.

Chemical Name	California Proposition 65
Pyrocatechol - 120-80-9	Carcinogen

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Pyrocatechol 120-80-9	X	X	X

16. OTHER INFORMATION

Revision note No information available

**Disclaimer**

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet



Infosafe No™	1CH6F	Issue Date : September 2014	RE-ISSUED by CHEMSUPP
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Product Name : **SODIUM HYDROXIDE**

Classified as hazardous

1. Identification

GHS Product Identifier	SODIUM HYDROXIDE	
Company Name	CHEM-SUPPLY PTY LTD (ABN 19 008 264 211)	
Address	38 - 50 Bedford Street GILLMAN SA 5013 Australia	
Telephone/Fax Number	Tel: (08) 8440-2000 Fax: (08) 8440-2001	
Recommended use of the chemical and restrictions on use	Acid neutralisation, chemical manufacture, rayon, cellophane, petroleum refining, pulp and paper, aluminium, detergents, soap, cellulose, textile processing, vegetable oil refining, plastics, explosives, dyestuffs, paint and paint remover, metal cleaning, etching and electroplating, reclaiming rubber, regenerating ion exchange resins, organic fusions, peeling of fruits and vegetables in food industry, cleaning products, food additive and laboratory reagent.	
Other Names	Name	Product Code
	SODIUM HYDROXIDE Mini Pearl LR	SL000
	SODIUM HYDROXIDE Pellet AR	SA178
	SODIUM HYDROXIDE Mini Pearl AR	SA000
	SODIUM HYDROXIDE Pellet LR	SL178
	Caustic soda, Sodium hydrate, Lye	
	SODIUM HYDROXIDE Mini Pearl TG	ST000
Other Information	EMERGENCY CONTACT NUMBER: +61 08 8440 2000 Business hours: 8:30am to 5:00pm, Monday to Friday.	

Chem-Supply Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon Chem-Supply Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of Chem-Supply Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

2. Hazard Identification

GHS classification of the substance/mixture	Corrosive to Metals: Category 1 Skin Corrosion/Irritation: Category 1A
Signal Word (s)	DANGER
Hazard Statement (s)	H290 May be corrosive to metals. H314 Causes severe skin burns and eye damage.
Pictogram (s)	Corrosion



Precautionary statement – Prevention	P234 Keep only in original container. P261 Avoid breathing dust/fume/gas/mist/vapours/spray. P264 Wash thoroughly after handling. P280 Wear protective gloves/protective clothing/eye protection/face protection.
Precautionary statement – Response	P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting. P303+P361+P353 IF ON SKIN (or hair): Remove/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. P310 Immediately call a POISON CENTER or doctor/physician.



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Precautionary statement – Storage P363 Wash contaminated clothing before reuse.
Store locked up.
Store in corrosive resistant/... container with a resistant inner liner.

3. Composition/information on ingredients

Chemical Characterization Solid

Ingredients	Name	CAS	Proportion	Hazard Symbol	Risk Phrase
	Sodium hydroxide	1310-73-2	100 %	C	R35

4. First-aid measures

Ingestion Rinse mouth thoroughly with water immediately. Give water to drink. DO NOT induce vomiting. If vomiting occurs, have victim lean forward to reduce risk of aspiration. If vomiting occurs give further water to achieve effective dilution. Seek immediate medical assistance.

Skin Wash affected areas with copious quantities of water immediately. Remove contaminated clothing and wash before re-use. Seek urgent medical assistance.
Cover skin with an emollient.

Eye contact Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. Seek immediate medical assistance.
If available, a neutral saline solution may be used to flush the contaminated eye/s an additional 30 minutes.

First Aid Facilities Maintain eyewash fountain and safety shower in work area.

Advice to Doctor Treat symptomatically as for strong alkalis. Consult Poisons Information Centre.
In severe cases, where excessive amounts of sodium hydroxide has been ingested, endoscopy should be performed to determine the severity of the oesophageal burns.

Other Information For advice, contact the National Poisons Information Centre (Phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor.

5. Fire-fighting measures

Hazards from Combustion Products May liberate toxic fumes in fire (sodium oxide).

Specific Methods Use extinguishing media most appropriate for the surrounding fire.
Small fire: Use dry chemical, CO₂ or water spray.
Large fire: Use water spray, fog or foam - Do NOT use water jets.
If safe to do so, move undamaged containers from the fire area. Cool containers with flooding quantities of water until well after the fire is out. Avoid getting water inside the containers.

Specific hazards arising from the chemical Material does not burn. Fire or heat will produce irritating, poisonous and/or corrosive gases.

Hazchem Code 2W

Precautions in connection with Fire Wear SCBA and chemical splash suit. Fully encapsulating, gas-tight suits should be worn for maximum protection. Structural firefighter's uniform is NOT effective for these materials.

6. Accidental release measures

Personal Precautions Do not allow hot material to contact water or other liquids. Avoid contact with skin. Avoid contact with eyes.

Personal Protection Wear protective clothing specified for normal operations (see Section 8)

Clean-up Methods - Small Spillages Sweep up (avoid generating dust) and remove to a suitable, clearly labelled container for disposal in accordance with local regulations.

Clean-up Methods - Large Spillages Seek expert advice on handling and disposal.

Environmental Precautions Avoid release to the environment.

7. Handling and storage

Precautions for Safe Handling Avoid generation or accumulation of dusts. Contaminated clothing should be removed and washed before reuse. Application of skin-protective barrier cream is recommended. Wash hands and face thoroughly after working with material. Use in well ventilated areas away from all ignition sources. In case of insufficient ventilation, wear suitable respiratory equipment. When diluting or preparing solution,



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Conditions for safe storage, including any incompatibilities	add caustic to water in small amounts to avoid boiling and splattering. Store in a cool,dry place. Store away from acids. Keep containers securely sealed and protected against physical damage.
Corrosiveness	Corrosive to aluminum, tin, zinc. Corrosive to steel at elevated temperatures.
Storage Regulations	Refer Australian Standard AS 3780 - 1994 'The Storage and Handling of Corrosive Substances'.
Other Information	Containers made of nickel alloys are preferred. Steel containers are acceptable if temperatures are not elevated.

8. Exposure controls/personal protection

Occupational exposure limit values	Name	STEL		TWA		Footnote
		mg/m3	ppm	mg/m3	ppm	
	Sodium hydroxide			2		Peak limitation
Other Exposure Information	A time weighted average (TWA) has been established for Sodium hydroxide (Safe Work Australia) of 2 mg/m3. The corresponding STEL level is 2 mg/m3 - Peak Limitation - a ceiling concentration which should not be exceeded over a measurement period which should be as short as possible but not exceeding 15 minutes. The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. In industrial situations maintain the concentrations values below the TWA. This may be achieved by					
Appropriate engineering controls	process modification, use of local exhaust ventilation, capturing substances at the source, or other methods.					
Respiratory Protection	Where ventilation is not adequate, respiratory protection may be required. Avoid breathing dust, vapours or mists. Respiratory protection should comply with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. Filter capacity and respirator type depends on exposure levels. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.					
Eye Protection	The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.					
Hand Protection	Avoid skin contact when removing gloves from hands, do not touch the gloves outer surface. Dispose of gloves as hazardous waste. Hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance. Recommendation: Rubber or plastic gloves.					
Personal Protective Equipment	Final choice of personal protective equipment will depend on individual circumstances and/or according to risk assessments undertaken.					
Footwear	Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.					
Body Protection	Clean clothing or protective clothing should be worn, preferably with and apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.					
Hygiene Measures	Do not eat, drink or smoke in work areas. Wash hands thoroughly after handling this material. Maintain good housekeeping.					

9. Physical and chemical properties

Form	Solid
Appearance	White, deliquescent flakes, pellets or minipeal.
Odour	Odourless.
Melting Point	318 - 323 °C
Boiling Point	1390 °C @ 760 mm Hg
Solubility in Water	Soluble.
Solubility in Organic Solvents	Soluble in alcohol and glycerol. Insoluble in acetone and ether.



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Specific Gravity	2.130 @ 20 °C
pH	12 (0.05% soln); 13 (1% soln); 14 (5% soln)
Odour Threshold	Odourless.
Flammability	Non-combustible.
Molecular Weight	40.01
Other Information	Absorbs water and carbon dioxide from the air.

10. Stability and reactivity

Chemical Stability	Stable under normal use conditons. Hygroscopic Slowly absorbs moisture from air, reacting with carbon dioxide and forming sodium carbonate.
Conditions to Avoid	Exposure to moisture. Exposure to air. Dust generation. Incompatibles.
Incompatible Materials	Strong acids, ally alcohol, ally chloride, phophorous, metals (aluminium, magnesium, tin, zinc), nitro compounds (nitroethane, nitromethane, nitroparaggins, nitropropane) and chloro organic compounds, organic halogen compounds (trichloroethylene), water.
Hazardous Decomposition Products	Sodium oxide.
Possibility of hazardous reactions	May react violently with strong acids. In contact with water, reaction may generate enough heat to ignite combustible materials. In contact with metals, reaction may produce flammable and explosive hydrogen gas. May react with organohalogen compounds to form spontaneously combustible compounds. May react explosively in contact with nitro and chloro organic compounds. May form explosive products with ammonia plus silver nitrate, benzene and benzene sulfonyl chloride, tetrahydrofuran, sodium tetrahydroborate, and trichlorophenol sodium salt plus methyl alcohol plus tichlorobenzene plus heat.
Hazardous Polymerization	Will not occur.

11. Toxicological Information

Ingestion	Corrosive. Swallowing may cause severe burns of mouth, throat, and stomach. Severe scarring of tissue and death may result. Similar symptoms may be experienced as for inhalation with, severe pain, severe scarring of tissue, diarrhea, bleeding, vomiting, fall in blood pressure, collapse and death. Damage may appear days after exposure. Risk of perforation in the oesophagus and stomach.
Inhalation	Severe irritant. Effects from inhalation of dust or mist vary from mild irritation to serious damage or burns of the mucous membranes of the upper respiratory tract, depending on severity of exposure. Symptoms may include coughing, wheezing, laryngitis, shortness of breath, nausea, vomiging, sneezing, sore throat or runny nose. Severe chemical pneumonitis and pulmonary edema may occur.
Skin	Corrosive. Contact with skin causes severe burns and scarring. Can penetrate deeply. Burns are not immediately painful, onset of pain and irritation may be minutes to hours.
Eye	Corrosive. Causes severe burns. Can penetrate deeply. In severe cases, ulceration, permanent impairment of vision and permanent blindness may occur.
Carcinogenicity	Not listed in the IARC Monographs.
Chronic Effects	Prolongecd contact with dilute solution or dust has destructive effects upon tissue.
Mutagenicity	No evidence of mutagenic properties.

12. Ecological information

Ecotoxicity	Toxic for aquatic organisms. Harmful effect due to pH shift.
Persistence and degradability	Methods for the determination of biodegradability are not applicable to inorganic substances.
Acute Toxicity - Fish	LC50 Gambusia affins (mosquito fish) - 125mg/L - 96 h.
Acute Toxicity - Daphnia	EC50 (Daphina magna): 76 mg/l/24h.

13. Disposal considerations

Disposal Considerations	Whatever cannot be saved for recovery or recycling should be disposed of according to relevant local, state and federal government regulations.
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14. Transport information



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Transport Information	Dangerous goods of Class 8 (Corrosive) are incompatible in a placard load with any of the following: Class 1, Class 4.3, Class 5, Class 6, if the Class 6 dangerous goods are cyanides and the Class 8 dangerous goods are acids, Class 7; and are incompatible with food and food packaging in any quantity. Not to be loaded on the same vehicle with strong acids.
U.N. Number	1823
UN proper shipping name	SODIUM HYDROXIDE, SOLID
Transport hazard class(es)	8
Hazchem Code	2W
Packaging Method	3.8.8
Packing Group	II
EPG Number	8A1
IERG Number	37

15. Regulatory information

Regulatory Information	Listed in the Australian Inventory of Chemical Substances (AICS).
Poisons Schedule	S6

16. Other Information

Date of preparation or last revision of SDS	September 2009.
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Literature References	'Standard for the Uniform Scheduling of Medicines and Poisons No. 4', Commonwealth of Australia, June 2013. Lewis, Richard J. Sr. 'Hawley's Condensed Chemical Dictionary 13th. Ed.', Rev., John Wiley and Sons, Inc., NY, 1997. National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.', 2007. 'Labelling of Hazardous Workplace Chemicals, Code of Practice' Safe Work Australia. Standards Australia, 'SAA/SNZ HB 76:2010 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand, 2010. Safe Work Australia, 'Approved Criteria for Classifying Hazardous Substances [NOHSC:1008(2004)]'. Safe Work Australia, 'Hazardous Substances Information System, 2005'. Safe Work Australia, 'National Code of Practice for the Labelling of Safe Work Hazardous Substances (2011)'. Safe Work Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)]'.
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Contact Person/Point	Paul McCarthy Ph. (08) 8440 2000 DISCLAIMER STATEMENT: All information provided in this data sheet or by our technical representatives is compiled from the best knowledge available to us. However, since data, safety standards and government regulations are subject to change and the conditions of handling and use, or misuse, are beyond our control, we make no warranty either expressed or implied, with respect to the completeness or accuracy to the information contained herein. Chem-Supply accepts no responsibility whatsoever for its accuracy or for any results that may be obtained by customers from using the data and disclaims all liability for reliance on information provided in this data sheet or by our technical representatives.
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Empirical Formula & Structural Formula NaOH

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