Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

XP-3636

Revision date: 06/27/2007

Supplier

ROHM AND HAAS ELECTRONIC MATERIALS LLC
A Subsidiary of The Dow Chemical Company
455 FOREST STREET
MARLBOROUGH, MA 01752 United States

For non-emergency information contact: 215-592-3000

For non-emergency information contact: 508-481-7950

Emergency telephone number

1 800 424 9300

Local emergency telephone number

989-636-4400

2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Water	7732-18-5	> 90.0 %
Sodium hydroxide	1310-73-2	1.0 - 5.0 %
Non-ionic surfactant		< 1.0 %

3. HAZARDS IDENTIFICATION

Emergency Overview

Appearance

Form	liquid
Colour	clear
Odour	Odorless

Hazard Summary	DANGER!
	Corrosive alkaline liquid and vapor. Causes severe burns. Onset of symptoms may be delayed.

Potential Health Effects
Primary Routes of Entry: Inhalation, ingestion, eye and skin contact.

Eyes: Will cause severe conjunctival irritation, corneal damage, and may result in loss of vision.

Skin: Material will cause chemical burns.

Ingestion: Swallowing may have the following effects:
corrosion of mouth, throat and digestive tract

Inhalation: Inhalation may have the following effects:
severe irritation of nose, throat and respiratory tract
Higher concentrations may have the following effects:
severe irritation to nose, throat and respiratory tract and possibly lung damage

Target Organs: Eye
Respiratory System
Skin

Carcinogenicity
Not considered carcinogenic by NTP, IARC, and OSHA

4. FIRST AID MEASURES

Inhalation: Remove from exposure. If there is difficulty in breathing, give oxygen. Immediate medical attention is required.

Skin contact: Immediately flush the skin with large quantities of water, preferably under a shower. If skin contact occurs, remove contaminated clothing and wash skin thoroughly. Continue washing for at least 20 minutes. Contaminated clothing should be washed or dry- cleaned before re-use. Immediate medical attention is required.

Eye contact: Immediately flush the eye with plenty of water for at least 20 minutes, holding the eye open. Immediate medical attention is required.

Ingestion: Do NOT induce vomiting. Wash out mouth with water. Have victim drink 1-3 glasses of water to dilute stomach contents. Immediate medical attention is required. Never administer anything by mouth if a victim is losing conciousness, is unconcious or is convulsing.

Notes to physician
Treat symptomatically. Treat skin burns conventionally.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Use water spray, foam, dry chemical or carbon dioxide.

Specific hazards during fire fighting: This product may give rise to hazardous vapors in a fire.

Special protective equipment for fire-fighters: Wear full protective clothing and self-contained breathing apparatus.

Further information: May emit corrosive vapor or mist.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear suitable protective clothing.
Wear respiratory protection.
Material can create slippery conditions.

Environmental precautions
Prevent the material from entering drains or water courses.
Do not discharge directly to a water source.
Advise Authorities if spillage has entered watercourse or sewer or has contaminated soil or vegetation.

Methods for cleaning up
Spills may be absorbed with appropriate absorbent material for alkaline materials.
Transfer into suitable containers for recovery or disposal.

7. HANDLING AND STORAGE

Handling
Use local exhaust ventilation. Avoid contact with eyes, skin and clothing. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Avoid breathing vapor. Keep container tightly closed.
Further information on storage conditions: Practice good personal hygiene to prevent accidental exposure.

Storage
Storage conditions: Store in original container. Storage area should be: cool dry well ventilated out of direct sunlight away from incompatible materials

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limit(s)

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value
Sodium hydroxide	ACGIH	Ceiling	2 mg/m3
	OSHA_TRANS	PEL	2 mg/m3
	Z1A	Ceiling	2 mg/m3
	Rohm and Haas	Ceiling	0.2 mg/m3

Eye protection: Chemical goggles and face shield.

Hand protection: Neoprene gloves. Other chemical resistant gloves may be recommended by your safety professional. Gauntlet sleeves.

Skin and body protection: rubber or neoprene apron

Respiratory protection: Respiratory protection if there is a risk of exposure to high vapor concentrations. The specific respirator selected must be based on the airborne concentration found in the workplace and must not exceed the working limits of the respirator.

Engineering measures: Engineering methods to prevent or control exposure are preferred. Methods include process or personnel enclosure, mechanical ventilation (local exhaust), and control of process conditions.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Form	liquid
Colour	clear
Odour	Odorless
pH	14.0
Boiling point/range	100 °C (212.00 °F)
Vapour pressure	Similar to water

Component: **Sodium hydroxide**

Vapour pressure	0.1333 kPa at 739 °C (1,362 °F)

Relative vapour density	Heavier than air.
Water solubility	completely soluble
Relative density	1.20 at 25.00 °C (77.00 °F)
Evaporation rate	Slower than ether
VOC's	0.000 g/l

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Hazardous reactions	Stable under normal conditions.
Conditions to avoid	contact with incompatible materials
Materials to avoid	Acids Aromatic hydrocarbon Aldehydes aluminum Tin Zinc alloys of these metals
Hazardous decomposition products	oxides of carbon,
polymerization	Will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

Component: **Sodium hydroxide**
Acute oral toxicity LD50 rat 4,090 mg/kg

Component: **Sodium hydroxide**
Acute oral toxicity LDLo rat 500 mg/kg

Component: **Sodium hydroxide**
Acute dermal toxicity LD50 rabbit 1,350 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicological information on this product or its components appear in this section when such data is available.

Sodium hydroxide

Ecotoxicity effects	
Toxicity to fish	LC50 18 mg/l
Toxicity to aquatic invertebrates	EC50 Daphnia magna 25 mg/l

13. DISPOSAL CONSIDERATIONS

Environmental precautions: Prevent the material from entering drains or water courses.
Do not discharge directly to a water source.
Advise Authorities if spillage has entered watercourse or sewer or has contaminated soil or vegetation.

Disposal
Dispose in accordance with all local, state (provincial), and federal regulations. Under RCRA, it is the responsibility of the product's user to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because the product uses, transformations, mixtures, processes, etc. may render the resulting materials hazardous.
Do not remove label until container is thoroughly cleaned. Empty containers may contain hazardous residues. This material and its container must be disposed of in a safe way.

14. TRANSPORT INFORMATION

DOT

Proper shipping name	Sodium hydroxide solution
UN-No.	UN 1824
Class	8
Packing group	III

IMO/IMDG

Proper shipping name	SODIUM HYDROXIDE SOLUTION
UN-No.	UN 1824
Class	8
Packing group	III

Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations

15. REGULATORY INFORMATION

SARA TITLE III: Section 311/312 Categorizations (40CFR370): Immediate health hazard

SARA TITLE III: Section 313 Information (40CFR372)
This product does not contain a chemical which is listed in Section 313 at or above de minimis concentrations.

US. Toxic Substances Control Act (TSCA) All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

California (Proposition 65)
This product does not contain materials which the State of California has found to cause cancer, birth defects or other reproductive harm.

16. OTHER INFORMATION

Hazard Rating

	Health	Fire	Reactivity
NFPA	3	0	0

Legend

ACGIH	American Conference of Governmental Industrial Hygienists
BAc	Butyl acetate
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
STEL	Short Term Exposure Limit (STEL):
TLV	Threshold Limit Value
TWA	Time Weighted Average (TWA):
|	Bar denotes a revision from prior MSDS.

The information provided in 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 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.

Version: 2.2

Material Safety Data Sheets (MSDS) for the product(s) you ordered from Rohm and Haas Company are enclosed.

By means of the Rohm and Haas automated MSDS distribution system, you will receive new MSDS for these products if there are any revisions within the next year. You will also receive new copies of these MSDS annually if you are a regular purchaser of these products.

It is important that these MSDS are made available to all those who handle or use these products. We wish to assist you in this effort. If there are specific individuals in your organization who are in a better position to provide effective hazard communication as required under the OSHA Standard, please send us their address information. Subsequent mailings will include these individuals.

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KELLER HALL
MINNEAPOLIS, Minnesota 55455-0171
UNITED STATES
0001860666 / IT

19 March 2013

As part of our Product Stewardship Program, we provide MSDS in conformance with the OSHA Hazard Communication Standard and/or state regulations. However, you may note that not all our products are considered hazardous under the Standard. Nevertheless, these MSDS provide you and your employees with important information concerning the safe handling, use, and disposal of these products.

You may be required to submit this MSDS and others that you receive to state and local emergency response organizations (SERC and LEPC) and to your local fire department. This requirement stems from the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA). In addition, the product may contain a chemical which is subject to the requirements of Section 313 of EPCRA. If a product contains one or more of these materials, they will be identified in Section 15 of the MSDS. These laws requires certain manufacturers to report their annual releases (as defined by the regulations) of specified chemicals listed in Section 313. You may be covered by other parts of the law, depending on which chemicals and the amount of the chemicals that you have at your facility. EPCRA includes the following basic requirements for facility operators:

Facilities that manufacture, process and use hazardous substances listed by the Environmental Protection Agency (EPA) in excess of designated quantities must:

- Provide emergency notification of releases;
- Submit inventory forms to the SERC, LEPC, and local fire departments;
- Submit emissions information to EPA and SERC; and
- May face penalties for noncompliance.

To assist you in complying with the U.S. Toxic Substances Control Act (TSCA), the inventory status is identified in Section 15 of the product's MSDS. If Section 15 of our MSDS cites a TSCA R&D Exemption, then:

- One or more of the constituents in our products are not listed on the TSCA inventory.
- This product may not be put into materials or devices that are placed into commerce.
- This product is provided solely for research and development (R &D) activities in accordance with regulations issued by the U.S. EPA (40 CFR 720.36 and 720.78).

These regulations require, in part, that the substance be used:

1. Solely for research and development purposes.
2. Under direction of technically qualified individuals.
3. Following documented prudent laboratory handling practices (29 CFR 1910.1450).

You may learn more about these requirements by calling the EPA Hotline 800-424-9346.
We appreciate your business and continue to strive to provide you with high quality products and effective information for their safe use.

Hazard Communication Department
Rohm and Haas Company

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