

# Semiconductor Insider

## Safety Matters

April 2007



### MSDS

### (Material Safety Data Sheet)

More than 30 million workers in the United States are exposed to hazardous chemicals in their work environment. This includes transporting hazardous materials on the road, handling dangerous chemicals in a lab, the construction of a new building, or renovation or demolition of an older building. In the Semiconductor Industry, many dangerous chemicals and gasses are used during the manufacturing process. Everyone in the fab, including manufacturing technicians, installation specialists, and maintenance engineers, must be knowledgeable about, and cautious of, these potential hazards.

To protect these workers, the Occupational Safety and Health Administration (OSHA) adopted the Hazard Communication Standard (HCS) in November 1983. The standard requires chemical manufacturers and importers to evaluate the hazards of chemicals that they produce and distribute. The HCS requires information about hazards, and necessary protective measures, to be disseminated on container labels and Material Safety Data Sheets (MSDSs).

MSDSs are the primary means of transmitting detailed chemical-hazard information to employers and employees who use these hazardous materials. A Material Safety Data Sheet, commonly referred to as an MSDS, is a technical bulletin containing data regarding the properties of a particular substance. An important component of workplace safety, it is intended to provide workers and emergency personnel with procedures for handling or working with substances in a safe manner, and includes information such as physical data (melting point, boiling point, flash point, etc.), toxicity, health effects, first aid, reactivity, storage, disposal, protective equipment, and spill handling procedures.

All employers with employees who are exposed to regulated chemicals must provide access to the labels and the MSDSs. Employers using manufactured chemicals must also train their employees to understand the information provided by the MSDS and the labels, and how to use the information to protect themselves. Most safety and health professionals consider MSDSs to be a primary component of their company's hazard communication programs. The exact format of an MSDS can vary from source to source.

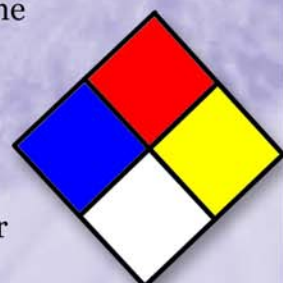
However, MSDSs alone cannot protect workers from chemical hazards. Safety must be the first thought for employees as they begin any work or activity. If you are unsure of what type of PPE (Personal Protection Equipment) to use, refer to the MSDS or local (fab or manufacturing plant) safety requirements.

In the U.S., OSHA requires that MSDS be available to employees for potentially harmful substances handled in the workplace under the "Employee right to know" rules. Ask your supervisor where you can find this information.

Here is a one page example of an MSDS.  
(Oddly enough, there is actually an MSDS for Air!)

Material Safety Data Sheet		
Version 1.2	MSDS Number 30000007686	
Revision Date 05/09/2006	Print Date 07/16/2006	
1. PRODUCT AND COMPANY IDENTIFICATION		
2. COMPOSITION/INFORMATION ON INGREDIENTS		
Components	CAS Number	Concentration (Weight)
Acetone	67-64-1	90% - 100%
3. HAZARDS IDENTIFICATION		
Emergency Overview		
Keep away from heat and sources of ignition. Components of the product may affect the nervous system. Flammable. Mild skin irritant. Mild eye irritant. Mild respiratory tract irritant.		
Potential Health Effects		
Inhalation	:	May cause central nervous system effects, such as headache, nausea, dizziness, confusion, breathing difficulties. Severe cases of overexposure can result in respiratory failure. May cause nose, throat, and lung irritation. Inhalation of vapors and/or aerosols in high concentration may cause irritation of respiratory system.
Eye contact	:	Contact with eyes may cause irritation.
Skin contact	:	If absorbed through the skin, may cause central nervous system effects, such as headache, nausea, dizziness, confusion, breathing difficulties. Mild skin irritation.
Ingestion	:	May cause central nervous system effects, such as headache, nausea, vomiting, abdominal pain, dizziness, confusion, breathing difficulties. Severe cases of overexposure can result in respiratory failure.
4. FIRST AID MEASURES		
General advice	:	Seek medical advice. If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately.
Eye contact	:	Rinse immediately with plenty of water also under the eyelids for at least 20 minutes. Remove contact lenses.
Skin contact	:	Wash off immediately with plenty of water for at least 20 minutes. Wash off with soap and water. Immediately remove contaminated clothing, and any extraneous chemical, if possible to do so without delay.
Ingestion	:	Never give anything by mouth to an unconscious person. If a person vomits when lying on his back, place him in the recovery position. Prevent aspiration of vomit. Turn victim's head to the side.
Inhalation	:	If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately. Move to fresh air.
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		Acetone

Click [HERE](#) to view a full MSDS for Acetone.



Comments and suggestions are always welcome and encouraged.



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