



# Quaker Knowledge Network

## MSDS Basics

### Skill Builder

#### Overview

Read a Material Safety Data Sheet (MSDS) and one will quickly understand that the regulatory world is full of jargon, acronyms and abbreviations. This "Skill Builder" will help with reading and understanding a Material Safety Data Sheet.

#### Definition

The federal government's Occupational Safety and Health Administration (OSHA) requires every company that manufactures or distributes hazardous chemicals in the United States to prepare a Material Safety Data Sheet (MSDS) for each chemical sold. This requirement is set forth in Hazard Communications Standard 29CFR 1910.1200, also known as the "Right To Know" law.

An MSDS provides workers and emergency personnel with the proper procedures for working with or handling a particular chemical or chemical mixture. MSDS's are not written for consumers. They are intended for workers who may be exposed to the substance on the job, employers who need to know proper storage methods, and emergency personnel like medical professionals, firefighters or hazardous material teams who must deal with chemical emergencies.

An MSDS contains information about the substance's physical data (flash point, viscosity, melting point, boiling point, etc.), toxicity, health effects, first aid requirements, storage requirements, reactivity with other chemicals, protective equipment instructions and spill or leak procedures. It must be noted that the MSDS is for the product as it is shipped and handled. If the product is diluted in water before use, an MSDS for the product "as used" will be very different.

#### MSDS Section By Section

##### Section 1 – Chemical Product and Company ID

The Quaker brand name on the product label should be the same as on the container. Quaker's manufacturing location and the 800-number for emergencies should also be listed.

##### Section 2 – Composition/Information on Ingredients

Only hazardous ingredients will be listed along with the Chemical Abstract Services (CAS) number. A weight percentage for each material will be shown, typically as a range.

##### Section 3 – Hazardous Identification

Issues most pertinent to emergency health professionals along with any adverse effects would be listed here.

##### Section 4 – First Aid Measure

Contact with skin and eyes are addressed here and any concerns regarding inhalation and ingestion.

##### Section 5 – Fire Fighting Measures

Information pertinent to fighting fires is contained here. Further, you will see the flash point and fire point as well as the test method. Any specific hazards or protective equipment will also be listed.

##### Section 6 – Accidental Release Measures

Includes information regarding personal and environmental precautions as well as appropriate methods for cleaning up spills.

##### Section 7 – Handling and Storage

Proper handling and storage of chemicals can be extremely important especially when storing compounds together. Incompatible products will be listed to avoid errors. The shelf life for the material should also be listed here. Remember that shelf life pertains only to the concentrate as sold not for the product as used in the sump or equipment.



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#### Section 8 – Exposure Controls and Personal Protection

Any specific concerns regarding the material, will be listed here with reference to OSHA, ACGIH, NIOSH, or other limits. The personal protection section will list any special equipment necessary.

#### Section 9 – Physical/Chemical Properties

Details like appearance, specific gravity, color, boiling or melting point, and many other useful or necessary parameters are found here.

#### Section 10 – Stability and Reactivity

This section focuses on the chemical stability of the product and any chemical reactivity likely to be experienced. Hazardous decomposition by-products will be listed here, if there are any.

#### Section 11 – Toxicological Information

Again, any hazardous components as identified by NTP, IARC, or OSHA will be detailed here. This section is intended primarily for medical professionals; Safety, Health and Environmental (SHE) professionals; safety experts and toxicologists.

#### Section 12 – Ecological Information

Impact of the material, if released into the environment, is discussed here. This section assists Section 6. Ecotoxicity and aquatic toxicity data is presented here.

#### Section 13 – Disposal Consideration

This section assists Section 6, focusing on generic disposal as “local” regulations generally take precedence.

#### Section 14 – Transport

U.S. Department of Transportation (DOT) and United Nations (UN) identification values are listed here.

#### Section 15 – Regulatory Information

United States regulations and specific state “Right to Know” (RTK) regulations will be found here. Superfund Amendments and Reauthorization Act (SARA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) reportable quantities would be listed here as well if they apply.

#### Section 16 – Other Information

This section will list the Hazardous Materials Identification System (HMIS) and National Fire Protection Association (NFPA) ratings and their descriptions and any other information available that is not already captured in any of the other 15 sections.



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## Terminology

Quaker leads many other companies in using clear and concise English in our MSDS's. For a more complete list, request a Quaker Pocket MSDS Dictionary.

TERM/ ABBREVIATION	DEFINITION
Boiling Point	Temperature at which a liquid will boil.
CAS Number	Registration number (Chemical Abstract Service number) assigned by the American Chemical Society to identify a chemical.
Corrosive	A chemical that destroys or irreversibly damages skin by contact or causes a severe corrosion rate in metals.
Endothermic	A chemical reaction that absorbs heat.
Exothermic	A chemical reaction that gives off heat.
Fire Point	The lowest temperature at which a liquid will flash and continue to burn after exposure to an open flame.
Flash Point	The lowest temperature at which a liquid will flash after exposure to an open flame but will not continue to burn.
Hazardous	Any chemical capable of adversely effecting human health or safety. OSHA uses several specific measures to classify a chemical as hazardous.
Hazardous Polymerization	A chemical reaction that releases large amounts of energy that can cause fires, explosions or can burst containers.
NIOSH	National Institute of Occupational Safety & Health, part of Public Health Service.
NTP	National Toxicology Program, part of Department of Health & Human Services, does research on many materials including chemicals.
PEL	Permissible Exposure Limit, OSHA established exposure limit, usually expressed as time weighted average (TWA).
Ph	0-14 scale of acidity (0-7) or alkalinity (7-14) of liquids. Seven (7) is neutral.
RCRA	Resource Conservation & Recovery Act, law covering waste disposal and encouraging waste minimization.
Specific Gravity	Number relating a chemical's density to the density of water. Substances with a specific gravity less than 1.0 will float.
TLV	Threshold Limit Value, maximum exposure limit for airborne materials, usually stated as Time Weighted Average (TWA)
Toxic Chemical	Evidence of an acute or chronic health hazard or listed by NIOSH as toxic.
TSCA	Toxic Substances Control Act controls exposure to/use of industrial chemicals.
VOC	Volatile Organic Compound, chemicals that easily form vapors, emissions regulated by EPA.

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