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VISTA

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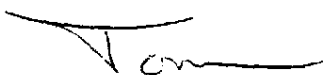
Kathy Rosica
CMA
2501 M Street N. W.
Washington, D. C. 20037

Dear Kathy:

I had a new staff member, who is being trained to do MSDS's, review the draft MSDS guideline document. Below is a summary of his comments, and attached are the few pages with specific comments.

1. Overall the document hits all the points of concern and should be useful to MSDS newcomers.
2. The main criticism is regarding organization and length. The document is very long, and without a sample MSDS or "structure" type outline the chapters and subchapters tend to merge together. Different colors or type styles are encouraged, as suggested, to clarify the main points of each section.

Sincerely,



Thomas G. Grumbles, C.I.H.
Environmental Quality Manager

dlj

Attachment

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EXAMPLES: Page 1 or page 1 of 6

Continued on next page.

This is the end of Section 2.

This is the last page of this MSDS.

Number the recommended section headings (Material Identification through Physical and Chemical Properties) using Arabic numerals (e.g., 1, 2, 3) rather than Roman numerals (e.g., I, II, III) or letters of the alphabet.

6. REVISION INDICATORS (RECOMMENDED)

Readers need some type of revision indicator to help them determine what has been changed in an updated MSDS. Below are some methods used to indicate revisions in either a cover letter or in the Supplemental section of the MSDS.

EXAMPLES:

- o This MSDS has been revised in the following section(s):
 - 1. Material Identification
 - 5. Physical and Chemical Properties
 - o A symbol in the right hand margin of this MSDS indicates that this line has been revised.
 - o The personal protection section of this MSDS was revised due to new recommendations.
 - o The pH was added to Section 5.
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7. KEY/LEGEND (RECOMMENDED)

In general, try to avoid abbreviations since they are often confusing or unknown. If used, include a key/legend to define abbreviations or potentially ambiguous terms. For example, N/A has been used to denote "not available" and "not applicable." Without an explanation, the meaning is unclear.

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The American National Standard for Hazardous Industrial Chemicals, Percautionary Labeling, Z129.1-1988 also provides a discussion of the health hazard evaluation (Appendix 1).

When the physical and health hazards have been identified their impact on all relevant sections of the MSDS must be evaluated. The primary sections in which to present the details of the hazards are Potential Health Effects for health effects and Physical and Chemical Properties, Fire and Explosion and Reactivity for physical effects. Each of the other sections in the MSDS builds on or supports the hazards identified in this step.

Now you are ready to draft the MSDS text. The rest of this guideline will help you decide what information to include. It will also help you determine where the information should be located and the appropriate language levels to use.

CHAPTER 5: SECTIONS OF AN MSDS

A. Section 1: MATERIAL IDENTIFICATION

Material Identity

PURPOSE: This subsection names the material and links the MSDS to the label, internal lists of hazardous materials and shipping documents. This information is essential for all users of the MSDS.

SCOPE: The identity of the material must be directly linked to the name found on the material label (MANDATORY), internal lists of hazardous materials (MANDATORY) and/or shipping papers (RECOMMENDED). This name should appear prominently at the top of each page (RECOMMENDED). The material may also be identified by alternate names or synonyms (OPTIONAL). A company product code may also be added for easy identification (OPTIONAL).

If one generic MSDS is used to cover several grades or minor variants of a material, all grade or material names must be listed on the MSDS (i.e. as synonyms) or the MSDS must clearly delineate the range of materials included (MANDATORY).

EXAMPLE:

- o the material name on the label is Methoquin AB; the MSDS must contain both the generic name (Methyl substituted quinolites) and the specific name Methoquin AB

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Are there significant reactivity hazards associated with emergency conditions?

(e.g., uncontrolled reaction with water or organics; will spontaneously decompose)

Is the material highly toxic (OSHA) or poisonous (DOT)?
If so, by what route of entry?

Is the material severely hazardous when inhaled?
(e.g., strong narcotic action, corrosive, displaces air causing an asphyxiation hazard, respiratory sensitizer, severe irritant)

Does it cause burns to living tissue?
(e.g., corrosive to skin, eyes, respiratory tract)

Does it cause severe skin or eye irritation?

Does it require specialized medical treatment for any contact or exposure?

Is it a confirmed or probable human carcinogen?
(NTP listed, IARC Class 1 or 2A, or OSHA listed carcinogen)

Can a single exposure result in other serious adverse health effects?
(e.g., confirmed or probable human teratogen)

Is it highly toxic to aquatic organisms?
(e.g., kills fish or algae at low concentrations)

Will it be persistent in the environment?
(e.g., PCB's, mercury)

Generally, if a hazard is not included on the label, it would not be included in the Emergency Overview.

If the material is not hazardous, you may want to include a statement indicating that it presents little or no hazard (if spilled) and/or no unusual hazard if involved in a fire (RECOMMENDED).

EXAMPLE 1: (Paragraph style with Pointers)

Mineral Acid

A colorless liquid which can react violently with water producing white clouds of toxic and corrosive vapor. Extremely corrosive to all body parts and may be fatal with contact, if swallowed or if inhaled. Exposures require

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specialized first aid and medical follow-up. Can react violently with water producing clouds of toxic and corrosive vapor. Not flammable, but reacts with most metals to form flammable hydrogen gas.

See Sections 3, 4, 5, 6, 7, 8

EXAMPLE 2: (Label Style Without Pointers)

Inorganic Salt

White to grey solid. Causes irritation to skin and eyes. Not flammable.

EXAMPLE 3: (Label Style With Pointers)

Plastic Beads

Cylindrical beads in various colors.
Can burn in fire, releasing toxic vapors.

See First Aid and Fire and Explosion for details.

EXAMPLE 4:

a. (Paragraph Style Without Pointers)

Polymer Solution

A milky white liquid with a strong "sweet" odor. Can cause severe eye irritation and will burn if involved in a fire. Solutions are extremely slippery when spilled. Highly toxic to fish and other water organisms.

.....
b. (Label Style With Pointers)

Same Material

Milky white liquid with a strong "sweet" odor.
Causes eye irritation.
Will burn if ignited.
Extremely slippery.

Highly toxic to fish and other water organisms

Health Hazards - Section 3

First Aid - Section 4

Fire & Explosion - Section 5

Spill and Leak Response - Section 6

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EYE EFFECTS

The material was slightly irritating to the rabbit eye. The P.I. Score is 18 out of 110.

ACUTE INHALATION

The 4-hr LC50 in rats was 2500 mg/kg (357 ppm). CNS depression would be expected. May be a cardiac sensitizer based on structural analogy.

SUBCHRONIC EFFECTS

Repeated inhalation exposure of rats for four or seven hours per day for eight days at 1000 ppm resulted in ataxia, decreased body weight, increased SGPT, and caused increased relative liver and kidney weights with accompanying histologic changes of an adaptive nature. A two-week oral gavage study in rats given 300 mg/kg/day showed hepatic hypertrophy in females but not in males.

CHRONIC EFFECTS/CARCINOGENICITY

A bioassay was conducted by gavage in rats given 60 or 150 mg/kg/day and mice at 230 or 550 mg/kg/day. Both rats and mice showed evidence of increases in hepatocellular carcinoma and adenoma. The doses did not exceed the MTD and the material is listed as a potential carcinogen by IARC.

MUTAGENICITY

The material was negative in the Ames test. It bound covalently in vivo to DNA, RNA and tissue proteins from rats and mice when injected i.p.

EXAMPLE 2: Potential health effects incorporating toxicological data in this section

Section 3: Potential Health Effects

EYE

- o May cause slight eye irritation.

SKIN

- o Prolonged exposure may cause skin irritation.
- o A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts.

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INGESTION

- o Single dose oral toxicity is low.
- o Small amounts swallowed incidental to normal handling operations are not likely to cause injury; swallowing amounts larger than that may cause injury.
- o If aspirated (liquid enters the lung), may be rapidly absorbed through the lungs and result in injury to other body systems.

SCOPE: List and include data, when known, on the following characteristics:

Recommended Characteristics

Appearance

Odor

Physical state (recommended, if not described in Material Identification)

pH

Vapor pressure (include reference temperature)

Vapor density

Boiling point

Freezing/melting point (specify)

Solubility in water

Specific gravity or density

These characteristics should always appear on an MSDS. Clearly identify if specific characteristics do not apply or for which data are not available.

Other properties may be specific to only certain materials. When applicable, include data on the following characteristics:

Optional Characteristics

Softening point

Evaporation rate

Viscosity

Bulk density

% volatile

Octanol/water partition coefficient

Saturated vapor concentration

Molecular weight

You do not need to list these characteristic names if data are unavailable.

Identify appropriate units of measurement for characteristics (see discussion in Chapter 4 on Units of Measurement).

K. Optional Section: TOXICOLOGICAL INFORMATION

PURPOSE: This section provides information on toxicity testing of the material and/or its components (OPTIONAL). It is intended for medical professionals, occupational health and safety professionals, and toxicologists.

SCOPE: This section may contain background data (either positive or negative) used to determine the hazards presented in the Potential Health Effects section. Include studies of questionable human relevance if not

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