Material Safety Data Sheets – A Hazard Communication Tool that is Largely Ignored in Kenya

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What are Material Safety Data Sheets (MSDSs)?

- MSDSs are reference documents. They are basically a one-stop shopping source for everything that you might need or want to know about a chemical.
- They are a vital source of information both to employers and employees-enables them to take steps to ensure the protection of their work places.
- Reduces illnesses and injuries through behavior change
Right-to-know

- Both employers and employees have a right-to-know the hazards and identities of the chemicals that they are exposed to.
- While available to them (in some cases), much of the information present on the MSDS is not primarily written for workers but for other audiences as well.
- The more information that appears on a label, the less likely it is for someone to read it or use it.
Concerns

- The information on MSDS is usually too technical for Kenyan workers
- Most MSDSs are inaccurate and doctored
- Most employees are ill trained to make reference to the MSDSs
- MSDSs are in incomprehensible languages
- Limited updating of MSDSs and yet chemical information is the foundation of workplace chemical safety.
Hazardous materials

toxic (T) substances and very toxic (T+) substances
flammable (F) substances and extremely flammable (F+) substances
irritating (Xi) substances and harmful (Xn) substances
Types of Hazardous Wastes as per Kenyan Law

- Corrosive waste
- Carcinogenic waste
- Flammable waste
- Persistent waste
- Toxic waste
- Explosive waste
- Radioactive waste
### Risk Phrases

[Changes of the 28th Adaptation to the Technical Progress (ATP 28) on 6 August 2001 are indicated.]

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>R 1</td>
<td>Explosive when dry.</td>
</tr>
<tr>
<td>R 2</td>
<td>Risk of explosion by shock, friction, fire or other sources of ignition.</td>
</tr>
<tr>
<td>R 3</td>
<td>Extreme risk of explosion by shock, friction, fire or other sources of ignition.</td>
</tr>
<tr>
<td>R 4</td>
<td>Forms very sensitive explosive metallic compounds.</td>
</tr>
<tr>
<td>R 5</td>
<td>Heating may cause an explosion.</td>
</tr>
<tr>
<td>R 6</td>
<td>Explosive with or without contact with air.</td>
</tr>
<tr>
<td>R 7</td>
<td>May cause fire.</td>
</tr>
<tr>
<td>R 8</td>
<td>Contact with combustible material may cause fire.</td>
</tr>
<tr>
<td>R 9</td>
<td>Explosive when mixed with combustible material.</td>
</tr>
<tr>
<td>R 10</td>
<td>Flammable.</td>
</tr>
</tbody>
</table>
Safety Phrases

[Changes of the 28th Adaptation to the Technical Progress (ATP 28) on 6 August 2001 are indicated.]

S 1 Keep locked up.

S 1/2 Keep locked up and out of the reach of children.

S 2 Keep out of the reach of children.

S 3 Keep in a cool place.

S 3/7 Keep container tightly closed in a cool place.

S 3/7/9 Keep container tightly closed in a cool, well-ventilated place. The phrase has been deleted by ATP 28 (6 August 2001), but may still appear in cards not modified since then.

S 3/9 Keep in a cool, well-ventilated place. The phrase has been deleted by ATP 28 (6 August 2001), but may still appear in cards not modified since then.
## Danger of fire and explosion

<table>
<thead>
<tr>
<th>Danger</th>
<th>Promotes fire</th>
<th>Danger of explosion</th>
<th>Highly flammable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symbol</td>
<td><img src="image1.png" alt="Symbol" /></td>
<td><img src="image2.png" alt="Symbol" /></td>
<td><img src="image3.png" alt="Symbol" /></td>
</tr>
<tr>
<td>Character</td>
<td>O</td>
<td>E</td>
<td>F</td>
</tr>
</tbody>
</table>
Rules for labelling of materials dangerous to health

- Symbol
- Character
- R- and S-phrases
# Danger to health

<table>
<thead>
<tr>
<th>Very toxic</th>
<th>toxic</th>
<th>Dangerous to health</th>
<th>irritating</th>
<th>corrosive</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Character T+" /></td>
<td><img src="image" alt="Character T" /></td>
<td><img src="image" alt="Character Xn" /></td>
<td><img src="image" alt="Character Xi" /></td>
<td><img src="image" alt="Character C" /></td>
</tr>
<tr>
<td>e. g. cyanide</td>
<td>e. g. methanol</td>
<td>e. g. toluene</td>
<td>e. g. acrylate</td>
<td>e. g. chloric acid</td>
</tr>
</tbody>
</table>
Rules for labelling of materials with danger of fire

- Identification of Danger
- Symbol for danger
- Identification character
- R- + S-phrases
- Classification according to „regulation for flammable liquids“
General Rule 1

Each person involved in handling dangerous substances or preparations should be provided with written instructions on the properties of the chemicals, including illustrations and pictograms. These safety instructions and information should be collected and stored in a place easily accessible at the workplace.
General Rule 2

- Every chemical container and package in the workplace, no matter how small or big, should have an appropriate, clearly understandable label.
General Rule 3

- Due to the lack of space, the information on the label on each container or package is often incomplete. It is, therefore, necessary to have access to more detailed information or instructions for the safe use of chemicals.
Material Safety Data Sheet

1. Identification:
   - Name of the substance or preparation
   - Name, address and telephone number of the company/supplier/undertaking

2. Composition and information on ingredients

3. Hazards identification

4. First-aid measures

5. Fire-fighting measures

6. Spillage, accidental release measures

7. Handling and storage

8. Exposure controls and personal protection

9. Physical and chemical properties

10. Stability and reactivity

11. Toxicological information

12. Ecological information

13. Disposal considerations

14. Transport information

15. National regulations and references

16. Other information
Material safety data sheets should be available within the enterprise for every substance that has been classified as hazardous. They should also be available for preparations (products) containing any of the hazardous substances as components.
Chemical safety data sheets are published under several names, such as:

- international chemical safety card, ICSC
- chemical safety card
- chemical info-sheet
- material safety data sheet, MSDS
- product safety data sheet
- health and safety data
- safety data sheet
Storage and Controlling
### Storage Rules of Hazardous Materials

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<th>C</th>
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**Key:**
- **+** May store together
- **−** Should not be stored together
- **○** Can store together under specific provisions, please pay attention to the material data sheets
Key Findings

- Out of 80 companies that have been audited by the center, only 15 percent were in possession of MSDSs that were largely not in use. The remaining 85% did not have them at all. Out of the 15 percent, only 5% were actually making good use of MSDSs due to their association with MNCs.
- Chemicals sold using trade names only
What KNCPC is doing

- Awareness raising as regards the importance of MSDSs to all chemical stakeholders
- Training of both employees and their employers
- Establishment of a hazard communication strategy to all stakeholders
- Working with stakeholders towards setting up a body to assess the accuracy of MSDSs
- Stricter enforcement of the provisions of the Factories and other Places of Work Act
- Participating in the development of Chemicals Management Profile, rules and regulations
Occupational Health and Safety Management System Conference for East Africa

- UK, and April 26-28, 2006
- East Africa (Kenya, Uganda, Tanzania)
- Based on OHSAS 18001/2
- Emphasis on Responsible Care, Corporate Social Responsibility, Hazard Identification and Risk Assessments among others
- Experts from SA, UK, Finland
- Thankful to IUPAC, UNIDO and UNESCO for this KIND support
Thank you for your attention!!