【Session 3】

How to Prepare a GPS Safety Summary
Case Study : Propylene

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Bangkok, Thailand
Risk assessment under GPS

Preparation
Step 1: Select substances for GPS risk assessment
Step 2: Gather information
Step 3: Allocate substances into Priorities
Step 4: Develop Priority-relevant information

Implementation
Step 5: Characterize Hazard
Step 6: Assess Exposure
Step 7: Conduct Risk Characterization

Step 8: Document outcomes
  - Document Risk Assessment Process and Outcome
  - Prepare a GPS Safety Summary
Today’s proceedings

Preparation of “Safety Summary” using documents such as the following:

- “Document of Risk assessment process and Outcome”

- “EU-REACH CSR (Chemical Safety Report) and e SDS (extended-Safety Data Sheet)

- “SDS” containing hazard information (and its assessment) used for the risk assessments
Substance used for today’s case study

- Risk assessments was conducted as a part of the effort of GPS activities (including risk assessments for EU-REACH registration, etc.)
- Manufacturing and uses are within a closed system
- No consumer use
- SDS containing hazard information (and its assessment) used for the risk assessments is available

“Propylene”
## Differences between SDS and Safety Summary

<table>
<thead>
<tr>
<th>Entry</th>
<th>SDS</th>
<th>GPS Safety Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Background</td>
<td>Regulatory</td>
<td>Voluntary program</td>
</tr>
<tr>
<td>Information source</td>
<td>Hazard information</td>
<td>Outcome of risk assessments</td>
</tr>
<tr>
<td>Target audience</td>
<td>Companies (B to B)</td>
<td>All stakeholders</td>
</tr>
<tr>
<td>Format</td>
<td>Required sections are specified by the regulation.</td>
<td>Guidance and company-specific decision</td>
</tr>
<tr>
<td>Section</td>
<td>16 sections</td>
<td>Selection of sections is company-specific</td>
</tr>
<tr>
<td></td>
<td>No section on exposures</td>
<td>Focus is on exposures and risk management measures</td>
</tr>
<tr>
<td>Contents Description</td>
<td>For experts  Technical information on handling  Quantitative hazard information</td>
<td>For general public and stakeholders Information such as safe handling instructions Qualitative hazard information</td>
</tr>
</tbody>
</table>
### Comparison of SDS, Safety Summary and Document of Risk assessment process and Outcome

<table>
<thead>
<tr>
<th></th>
<th>SDS</th>
<th>GPS Safety Summary</th>
<th>Document of Risk assessment process and Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Background</strong></td>
<td>Regulatory</td>
<td>Voluntary program (GPS)</td>
<td></td>
</tr>
<tr>
<td><strong>Target audience</strong></td>
<td>Companies (B to B)</td>
<td>All stakeholders</td>
<td>Company internal information</td>
</tr>
</tbody>
</table>
| **Contents**          | Technical information on chemical properties, hazard Information and its evaluation, and handling | General statement on major properties of of the substance Brief explanation on use, safe handling, risk management, potential hazard and exposure scenario | • Process of risk assessments  
• Hazard / Exposure info and its evaluation  
• Final outcome of the risk assessment  
• Risk management measures, etc. |
| **Purpose**           | For appropriate management of the substance (by companies) | To gain public confidence (improve transparency, increase interest in chemicals, risk communication, etc.) | To be used as a corporate (internal) document to show the process of the risk assessment |
Comparison of SDS, Safety Summary and Document of Risk assessment process and Outcome

- “The summary should be fairly basic and understood by a layman”

- Actual preparation process for Safety Summary will be facilitated by
  (1) ensuring consistency mainly with SDS, which also is a “corporate document” that provides technical information on properties hazard Information and its evaluation, and handling
  and
  (2) keeping in mind to use not professional but generic terms.
Example of a template for Safety Summary recommended by JCIA

JCIA recommended template (example)

1. Substance Name
2. General Statement
3. Chemical identity
4. Uses and Applications
5. Physical / chemical properties
6. Human Health Safety Assessment
7. Environmental Safety Assessment
8. Exposure
9. Risk Management Recommendations
10. Regulatory Information / Classification and Labelling Information
11. Contact Information Within Company
12. Date Of Issue / Revision
13. Additional Information

An example of JCIA recommended template including above sections was prepared based on ICCA template.

1. Identification of the substance and of the company
2. Hazards identification
3. Composition/information on ingredients
4. First aid measures
5. Firefighting measures
6. Accidental release measures
7. Handling and storage
8. Exposure controls/personal protection
9. Physical and chemical properties
10. Stability and reactivity
11. Toxicological information
12. Ecological information
13. Disposal considerations
14. Transport information
15. Regulatory information
16. Other information
Comparison of Sections between GPS Safety Summary and SDS

<table>
<thead>
<tr>
<th>GPS Safety Summary</th>
<th>SDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Substance Name</td>
<td>1. Identification of the substance and of the company</td>
</tr>
<tr>
<td>2. General Statement</td>
<td>2. Hazards identification</td>
</tr>
<tr>
<td>3. Chemical identity</td>
<td>3. Composition/information on ingredients</td>
</tr>
<tr>
<td>4. Uses and Applications</td>
<td>4. First aid measures</td>
</tr>
<tr>
<td>5. Physical / chemical properties</td>
<td>5. Firefighting measures</td>
</tr>
<tr>
<td>6. Human Health Safety Assessment</td>
<td>6. Accidental release measures</td>
</tr>
<tr>
<td>7. Environmental Safety Assessment</td>
<td>7. Handling and storage</td>
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<td>12. Date Of Issue / Revision</td>
<td>12. Ecological information</td>
</tr>
<tr>
<td>15. Regulatory information</td>
<td>15. Regulatory information</td>
</tr>
<tr>
<td>16. Other information</td>
<td>16. Other information</td>
</tr>
</tbody>
</table>

Sections (information) that are not in SDS but should be included in Safety Summary.
Preparation process for Safety Summary

Typical process

- Document of Risk assessment process and Outcome
- JCIA recommended template
- GPS Safety Summary

Today’s demonstration (tip)

- SDS sections 1-16
- Document of Risk assessment process and Outcome
- GPS Safety Summary

Reference to relevant sections of SDS will facilitate the process.
Comparison of SDS, Safety Summary and Document of Risk assessment process and Outcome

- “The summary should be fairly basic and understood by a layman”

- Actual preparation process for Safety Summary will be facilitated by
  1. ensuring consistency mainly with SDS, which also is a “corporate document” that provides technical information on properties hazard Information and its evaluation, and handling
  2. keeping in mind to use not professional but generic terms.
List of References
(used for today’s demonstration for preparation of Safety Summary)

- CEFIC Conversion template REACH dossier into GPS Safety Summary  
- Globally Harmonized System of Classification and Labelling of Chemicals (GHS)
1. Substance Name

Enter name of the substance (title).

References:
- SDS Section 1. Product and company information, Section 3. Composition and ingredients
- NITE Chemical Risk Information Platform (CHRIP) - General information, national regulation
- (REACH) eSDS: Section 1 of SDS, CSR: part B section 1, IUCLID section 1

Substance name

Propylene

Name of the substance used as title can be selected from product name, chemical name or common name.
2. General Statement

Enter general statement on the substance such as properties, hazards, handling recommendations and uses and benefits.

Reference:
- NITE Chemical Risk Information Platform (CHRIP) - Information on exposure – use (in Japanese)

GENERAL STATEMENT

Propylene is a clear and colorless gas with characteristic odor, and extremely flammable. It may form explosive mixture with vapor/air. Contains gas under pressure; may explode if heated. Propylene may cause drowsiness or dizziness.

Enter summaries (excerpts) of Section “5. Physico-chemical properties”, “6. Human health effects” and “7. Environmental effects”.

General use of propylene is a synthetic raw material for acrylonitrile, polypropylene, ethylene-propylene rubber, propylene oxide, acetone, isopropyl alcohol, octanol, etc. (Source: NITE CHRIP IV Exposure Information – Use http://www.safe.nite.go.jp/japan/sougou/view/ComprehensiveInfoDisplay_jp.faces)
### 3. Chemical Identity

Enter chemical identity of the substance.

#### References:
- SDS Section 1. Product and company information, Section 3. Composition/information on ingredients
- NITE Chemical Risk Information Platform (CHRIP) - General information, national regulation
- (REACH) eSDS: Section 1 of SDS, CSR: part B section1, IUCLID section 1

#### CHEMICAL IDENTITY

<table>
<thead>
<tr>
<th>Generic name</th>
<th>Propylene</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand name</td>
<td>Propylene</td>
</tr>
<tr>
<td>Synonyms</td>
<td>Propene; methylethylene; methylethene</td>
</tr>
<tr>
<td>Chemical name</td>
<td>Prop-1-ene</td>
</tr>
<tr>
<td>CAS number</td>
<td>115-07-1</td>
</tr>
<tr>
<td>Reference number in Gazetted List in Japan</td>
<td>Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.</td>
</tr>
<tr>
<td>Molecular formula</td>
<td>C3H6</td>
</tr>
<tr>
<td>Structural formula</td>
<td>[H(_2)C=CH(=)CH(_2)]</td>
</tr>
</tbody>
</table>

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4. Use and Applications

Enter use (applications) of the substance including its benefit, with a focus on benefit to consumers and society.

References:
- Product catalogue of the company, etc.
- (REACH) eSDS: Section 1.2 of SDS Section 1 of the Exposure Scenario,
  CSR: part B section 2 and 9, IUCLID section 3.5

USES AND APPLICATIONS

Propylene produced by our company is primarily used as a raw material for polypropylene and propylene oxide. As a synthetic resin with many excellent properties including lightweight, workability, durability, heat resistance, and chemical resistance, polypropylene is widely used in car bumpers and instrument panels, food trays, home electrical appliances, and medical devices.

Enter “company-specific use”. “General use” should be entered under Section “2. Summary of the substance”. Risk assessments on company-specific use under the effort of GPS activities (including REACH registration) is a prerequisite. Uses covered by the Safety Summary should be limited to the uses within supply chain of the company.
5. Physical/Chemical Properties

Enter color, physical state, odor, melting point, vapor pressure, water solubility, flammability, etc. Information can be presented in list view format.

Reference: ▪ SDS Section 2. Hazard identification, 9. Physical and chemical properties ▪ (REACH) eSDS: Section 9 of SDS, CSR: part B section 1, IUCLID section 4

**Propylene** is a clear, colorless gas with characteristic odor, and extremely flammable. It may form explosive mixture with vapor/air. Contains gas under pressure; may explode if being heated.

**Enter summary statement** (→ Copy to Section “2. General Statement”)

1. “Color”, “odor” and “physical state”
2. Properties classified as hazardous by GHS classification
   (Enter H-statement used by GHS.)

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Clear and colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>Characteristic odor</td>
</tr>
<tr>
<td>pH</td>
<td>No reliable data available.</td>
</tr>
<tr>
<td>Melting/freezing point</td>
<td>-184.3°C</td>
</tr>
</tbody>
</table>

Enter “no reliable data available” if that is the case.