Communication of Hazards
Respirable Crystalline Silica (RCS)

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Question to start with:

Q. How would you rate your facility’s current HazCom program (*content & effectiveness*)

a. Above par
b. It’s OK
c. Have no clue
d. Rather not say
Safety Data Sheet Management

Respirable Crystalline Silica (RCS)

Binders

Corrosives

Flammables

Formaldehyde

Molten metal

Ammonia

Irritants

Carcinogens

Protective Equipment

Protective Clothing

Respirators

Control Methods

Handling & Storage

Spills & Leaks
GOOD THINGS TO KNOW – when helping others learn:

1. Have a general knowledge of silica (i.e. mineral from the earth).

2. Which foundry materials contain a portion of crystalline silica.

3. What task / process most likely generates (crystalline silica) dust.

So…..

What guidance should I use for training?
Communication of respirable crystalline silica hazards to employees

The employer shall:

- include respirable crystalline silica in their HazCom program,
- ensure the employee has access to labels on containers of crystalline silica and safety data sheets,
- ensure that at least the following hazards are addressed:
  - Cancer,
  - lung effects,
  - immune system effects, and
  - kidney effects.
(j) Communication of respirable crystalline silica hazards to employees

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**Section 2. Hazard Identification**

**EMERGENCY OVERVIEW:**

**Hazard Classification:**
- H350 – Carcinogenicity – Category 1A
- H371 – Specific target organ toxicity, single exposure – Category 3
- H372 – Specific target organ toxicity, repeated or prolonged – Category 1
- H331 – Acute toxicity, inhalation – Category 3
- H317+H334 – Sensitization, skin and respiratory – Category 3
- H314 – Skin corrosion/irritation – Category 1B
- H318 – Serious eye damage/eye irritation – Category 1

**Signal word:** DANGER

**Pictogram:**

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**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>14808-60-7</td>
<td>Crystalline Silica in the form of Quartz</td>
<td>87 - 99.9%</td>
</tr>
</tbody>
</table>

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**DANGER**

- May cause cancer (inhalation)
- Causes damage to organs through prolonged or repeated exposure (inhalation)
- May be corrosive to metals
- Causes severe skin burns and eye damage
- Causes serious eye damage

*Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust. Do not get in eyes or on skin. Wash hands and other exposed areas thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves, protective clothing, eye protection, respiratory protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. IF ON SKIN: Wash with plenty of water. IF exposed or concerned, get medical advice/attention. Dispose of contents/container in accordance with local, regional, national, and international regulation.*
(j) Communication of respirable crystalline silica hazards to employees

The employer shall:

- include respirable crystalline silica in their HazCom program,
- ensure the employee has access to labels on containers of crystalline silica and safety data sheets,
- ensure that at least the following hazards are addressed:
  - Cancer,
  - lung effects,
  - immune system effects, and
  - kidney effects.
Employee information and training
(3) **Employee information and training**

Ensure each employee can demonstrate knowledge & understanding of:

- Health hazards
- Specific tasks that could result in RCS exposure,
- Specific measures the employer has implemented to protect employees
- Purpose and description of the medical surveillance program
(A) The health hazards associated with exposure to respirable crystalline silica;

- Cancer,
- lung effects,
- immune system effects, and
- kidney effects.

- With progression, symptoms may include shortness of breath, coughing, weakness, and inability to fight off infections.

Source: OSHA (2016)
(B) **Specific tasks** in the workplace that could result in exposure to respirable crystalline silica;
(C) Specific measures the employer has implemented to protect employees from exposure to respirable crystalline silica, including engineering controls, work practices, and respirators to be used;
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**Assessment (monitoring)**

**Medical Surveillance**

**Recordkeeping**
(C) Specific measures the employer has implemented to protect employees from exposure to respirable crystalline silica, including engineering controls, work practices, and respirators to be used;
(D) The contents of this section; and

(E) The purpose and a description of the medical surveillance program required by paragraph (i) of this section.
Consider developing at your facility:

<table>
<thead>
<tr>
<th>Department</th>
<th>Shift</th>
<th>Description of Task</th>
<th>Engineering Controls used (local, vacumm, enclosure / isolation, etc.)</th>
<th>Work Practices (forms of Admin Controls - i.e. job rotation, timing of tasks, etc.)</th>
<th>Respiratory Protection (dust mask, half-mask w/ HEPA filters, Air-Helmet, Powered Air w/ HEPA filters)</th>
<th>Housekeeping Measures (dry sweeping, damping, vaccum, wash-down, periodic cleaning schedule, etc.)</th>
</tr>
</thead>
</table>
Regulated Areas

Wherever an employee’s exposure to airborne concentrations of RCS is, or can reasonably be expected to be, in excess of the PEL.
(2) Post signs at all entrances to “regulated areas”

DANGER

Respirable Crystalline Silica

- May cause cancer
- Causes damage to lungs
- Wear respiratory protection in this area
- Authorized Personnel Only

a. To be posted at all entrances to the regulated area.
(2) Post signs at all entrances to “regulated areas”

DANGER

Respirable Crystalline Silica
- May cause cancer
- Causes damage to lungs
- Wear respiratory protection in this area
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- To be posted at all entrances to the regulated area.

- Employer to limit access to regulated areas to:
  - persons authorized and required by work duties in the regulated area,
  - persons entering to observe monitoring procedures,
  - Any person authorized by OSHA

- Employer shall provide appropriate respiratory protecting for those in the area.
SUMMARY

• Include *CRS* with hazcom training program
  – Identification methods (*i.e.* labels & SDS)
  – The specific health hazards associated with CRS

• **Must have a general knowledge and understanding of:**
  – Potential exposure areas and health hazards
  – Specific tasks associated with exposures
  – Types of control measures implemented
  – Purpose and description of the surveillance program

• **Identity of Regulated Areas**
  – Post appropriate signage
  – Develop entry guidelines
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