

## HH-21.1. Occupational scenario for general maintenance activities

|   |              |   |
|---|--------------|---|
| <b>Systematic title based on use descriptor</b> | <b>PROCs</b> |   |
|   | 8a           | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. |
|   | 8b           | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.     |

## HH-21.2 Controlling worker exposure

|   |   |  |
|---|---|--|
| <b>Product characteristics</b>  | Granular or powder form.  |  |
| <b>Amounts used</b>   | Depends on the size of the plant.   |  |
| <b>Frequency and duration of use</b>  | Daily, planned or reactive maintenance on the plants.   |  |
| <b>Human factors not influenced by risk management</b>  | None  |  |
| <b>Other given operational conditions affecting workers exposure</b>                          | Most activities take place indoors, outdoors activities possible.   |  |
| <b>Technical conditions and measures at process level (source) to prevent release</b>         | Most of the transfer of substances and the production processes are closed and automatically controlled from control cabins on the plant. Maintenance activities take place on and around the plant. During maintenance normal engineering controls will not always be working. |  |
| <b>Technical conditions and measures to control dispersion from source towards the worker</b> | Where processes are partially open, LEV is used to control exposure to fumes.   |  |
| <b>Organisational measures to prevent /limit releases, dispersion and exposure</b>            | Appropriate training. Regular testing and maintenance of plant and equipment.   |  |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation</b>  | <b>Clothing</b>   | Standard work clothes.   |
|   | <b>Gloves</b>   | Not required for normal industrial exposure.                                 |
|   | <b>Eye protection</b>   | Required where good hygiene practice or substance classification demands it. |
|   | <b>RPE</b>  | P2/P3 required where exposure is above the DNEL.                             |

## HH-21.3. Exposure estimation

| INHALATION                               |                         |  |  |                            |  |   |                                |        |
|--|-------------------------|--|--|----------------------------|--|---|--------------------------------|--------|
|  |                         | Activity                                   | Source/ Parameters                         | RMM                        | Value<br>8h TWA<br>mg B/m <sup>3</sup> | RCR<br>DNEL = 1.45<br>mg B/m <sup>3</sup> |                                |        |
| <b>Human Health Exposure Estimations</b> | <b>Measured</b>         | Maintenance in closed manufacturing plants | 90P of measured data (13 datapoints)       | RPE not taken into account | 1.33                                   | 0.92                                      |                                |        |
|  | DERMAL                  |  |  |                            |  |   |                                |        |
|  |                         |  | Activity                                   | Source/ Parameters         | RMM                                    | Value<br>mg B/day                         | RCR<br>DNEL = 4800<br>mg B/day |        |
|  | <b>Modelled (MEASE)</b> |  | Maintenance in closed manufacturing plants | <b>Physical form</b>       | high dustiness                         | -   | 0.173                          | <0.001 |
|  |                         |  |  | <b>Content</b>             | > 25% boron                            |   |                                |        |
|  |                         |  |  | <b>PROC</b>                | 8a                                     |   |                                |        |
|  |                         |  |  | <b>Duration</b>            | 60 - 240 min                           |   |                                |        |
|  |                         |  |  | <b>Use pattern</b>         | non-dispersive                         |   |                                |        |
|  |                         |  |  | <b>Handling</b>            | direct                                 |   |                                |        |
|  |                         |  |  | <b>Contact level</b>       | incidental                             |   |                                |        |

## HH-21.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

If the parameters used in the MEASE model outlined above do not reflect conditions at the DU facility, the DU can use MEASE and input the parameters that do reflect conditions at the DU facility to check whether the DU works inside the boundaries set by the ES. Detailed guidance for evaluation of ES can be acquired via your supplier or from the ECHA website (guidance R14, R16).