

HH-3.1. Occupational scenario for refining and processing borates

| Systematic title based on use descriptor | PROCs | |
|--|---|---|
| | 1 | Use in closed process, no likelihood of exposure. |
| | 2 | Use in closed, continuous process with occasional controlled exposure. |
| | 3 | Use in closed batch process (synthesis or formulation). |
| | 4 | Use in batch and other process (synthesis) where opportunity for exposure arises. |
| 14 | Production of preparations /articles by tableting, compression, extrusion, pelletisation. | |

HH-3.2 Controlling worker exposure

| | | |
|--|---|--|
| Product characteristics | Granular or powder form. | |
| Amounts used | In the order of 1.5 tonnes per batch. | |
| Frequency and duration of use | Routine or campaign base. | |
| Human factors not influenced by risk management | None | |
| Other given operational conditions affecting workers exposure | Activities take place indoors above ambient temperature. | |
| Technical conditions and measures at process level (source) to prevent release | The process is closed. | |
| Technical conditions and measures to control dispersion from source towards the worker | LEV present at charge and discharge point of big bags or 25kg bags. | |
| Organisational measures to prevent /limit releases, dispersion and exposure | Appropriate training. Regular testing and maintenance of plant and equipment. | |
| Conditions and measures related to personal protection, hygiene and health evaluation | Clothing | Standard work clothes |
| | Gloves | Not required for normal industrial exposure |
| | Eye protection | Required where good hygiene practice or substance classification demands it. |
| | RPE | P2/P3 required where exposure is above the DNEL. |

HH-3.3. Exposure estimation

| Human Health Exposure Estimations | INHALATION | | | | | | |
|-----------------------------------|------------------|-----------------------|---|----------------|--|---|--------|
| | | Activity | Source/ Parameters | RMM | Value 8h TWA mg B/m ³ | RCR DNEL = 1.45 mg B/m ³ | |
| | Measured | Processing of borates | 2 datapoints | - | 0.41 & 0.39 | 0.27 & 0.28 | |
| | Modelled (ART) | Processing of borates | Fine dust Falling powders Dry product, Routine transfer, Rate 10-100kg/minutes Handling that reduces contact between product and air Effective housekeeping, Indoors Any size workroom Moveable capturing hood Good natural ventilation | LEV | 0.32 (90P) | 0.22 | |
| | DERMAL | | | | | | |
| | | Activity | Source/ Parameters | RMM | Value mg B/day | RCR DNEL = 4800 mg B/day | |
| | Modelled (MEASE) | Processing of borates | Physical form | high dustiness | - | 0.014 | <0.001 |
| | | | Content | 5 - 25% boron | | | |
| | | | PROC | 4 | | | |
| | | | Duration | < 15 min | | | |
| Use pattern | | | non-dispersive | | | | |
| Handling | | | non-direct | | | | |
| | | Contact level | incidental | | | | |

HH-3.4. 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).