

HH-18.1. Occupational scenario for transfer of substance or preparation from/to large vessels/containers at dedicated facilities

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

HH-18.2 Controlling worker exposure

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| Product characteristics | Granular or powder form. | |
| Amounts used | A road tanker contains about 25-40 tonnes. | |
| Frequency and duration of use | Weekly, daily or several times a day. Off-loading lasts for one to two hours per road tanker. | |
| Human factors not influenced by risk management | None | |
| Other given operational conditions affecting workers exposure | Activities take place indoors at ambient conditions. | |
| Technical conditions and measures at process level (source) to prevent release | The transfer of borate is made pneumatically. Closed system with little opportunity for worker exposure. The connection and disconnection of the flexible pipework takes one or two minutes, and this is the only opportunity for potential exposure to the borate. Borates arriving by pallet have no potential exposure since the pallets are sealed with polythene shrink wrap. | |
| Technical conditions and measures to control dispersion from source towards the worker | The receiving silos are fitted with filters to prevent the dispersion of borate with the displaced air from the top of the silos. | |
| 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 | - |

HH-18.3. 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 | Pneumatically transfer of substance from/to large vessels | 1 datapoint | - | 0.016 | 0.011 |
| | Modelled (ART) | Pneumatically transfer of substance from/to large vessels | Fine dry dust Vacuum transfer of powders Transferring 100-1000kg/minute Open process Fully enclosed process Outdoors | LEV | 0.03 (90P) | 0.021 |
| | DERMAL | | | | | |
| | | Activity | Source/ Parameters | RMM | Value mg B/day | RCR DNEL = 4800 mg B/day |
| Modelled (MEASE) | Pneumatically transfer of substance from/to large vessels | Physical form | high dustiness | - | 0.024 | <0.001 |
| | | Content | > 25% boron | | | |
| | | PROC | 2 | | | |
| | | Duration | < 15 min | | | |
| | | Use pattern | closed system | | | |
| | | Handling | non-direct | | | |
| Contact level | incidental | | | | | |

HH-18.4. 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).