

HH-34.1. Occupational scenario for greasing at high energy conditions

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|---|--------------|-------------------------------------|
| Systematic title based on use descriptor | PROCs | |
| | 18 | Greasing at high energy conditions. |

HH-34.2 Controlling worker exposure

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|---|---|--|
| Product characteristics | Greases contain approximately 0.01% boron. | |
| Amounts used | Widely varying but unlikely to be more than a few kg per day. | |
| Frequency and duration of use | Manual application of grease, or changing grease drums or buckets may take up to 1 hour. Working at machinery where grease has been applied may be for a whole shift. | |
| Human factors not influenced by risk management | None | |
| Other given operational conditions affecting workers exposure | Activities take place indoors. The machinery may be operating at high temperatures. | |
| Technical conditions and measures at process level (source) to prevent release | The machine should be enclosed as far as possible. There should also be a time delay so that the LEV has time to remove the aerosol before the enclosure is opened. | |
| Technical conditions and measures to control dispersion from source towards the worker | LEV captures fume and aerosol from the process. | |
| 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-34.3. Exposure estimation

| | INHALATION | | | | | | | | | | | | | | | | | | | |
|-----------------------|--|-----------------------------|--|----------------------|--|---|------------|-------------|----|-----------------|-------------|--------------------|----------------|-----------------|--------|----------------------|--------------|---|-------|--------|
| | | Activity | Source/ Parameters | RMM | Value 8h TWA mg B/m ³ | RCR DNEL = 1.45 mg B/m ³ | | | | | | | | | | | | | | |
| | Human Health Exposure Estimations | | During changeover of drums or buckets, or during addition from a cartridge, as the grease is a paste, no airborne contamination will occur. | | | | | | | | | | | | | | | | | |
| Modelled (ART) | | Operation of the machine | Far field exposure Hot process, Application of liquids in high speed processes Large scale Open process Effective housekeeping No secondary controls No segregation No personal enclosure Natural ventilation | Indoors with LEV | 0.0017 | 0.0012 | | | | | | | | | | | | | | |
| DERMAL | | | | | | | | | | | | | | | | | | | | |
| | | Activity | Source/ Parameters | RMM | Value mg B/day | RCR DNEL = 4800 mg B/day | | | | | | | | | | | | | | |
| | Modelled (MEASE) | Manually greasing machinery | <table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 0;"> <tr><td style="width: 15%;">Physical form</td><td>liquid</td></tr> <tr><td>Content</td><td>< 1% boron</td></tr> <tr><td>PROC</td><td>10</td></tr> <tr><td>Duration</td><td>15 - 60 min</td></tr> <tr><td>Use pattern</td><td>non dispersive</td></tr> <tr><td>Handling</td><td>direct</td></tr> <tr><td>Contact level</td><td>intermittent</td></tr> </table> | Physical form | liquid | Content | < 1% boron | PROC | 10 | Duration | 15 - 60 min | Use pattern | non dispersive | Handling | direct | Contact level | intermittent | - | 0.048 | <0.001 |
| Physical form | liquid | | | | | | | | | | | | | | | | | | | |
| Content | < 1% boron | | | | | | | | | | | | | | | | | | | |
| PROC | 10 | | | | | | | | | | | | | | | | | | | |
| Duration | 15 - 60 min | | | | | | | | | | | | | | | | | | | |
| Use pattern | non dispersive | | | | | | | | | | | | | | | | | | | |
| Handling | direct | | | | | | | | | | | | | | | | | | | |
| Contact level | intermittent | | | | | | | | | | | | | | | | | | | |

HH-34.4. 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).