**SCENARIUSZ NARAŻENIA DO ZAKOMUNIKOWANIA**

**Nazwa substancji:** calcium chloride

**numer WE:** 233-140-8

**Numer CAS:** 10043-52-4

**Numer Rejestracji:**

**Data utworzenia/zmiany:** 16/04/2020

**Autor:** Apeiron-Team NV

**Spis treści**

[1. ES 1: Wytwarzanie](#N10033) [3](#N10033)

[2. ES 2: Formulacja lub przepakowanie](#N10449) [6](#N10449)

[3. ES 3: Zastosowanie w obiektach przemysłowych; Różne sektory (SU 1, SU 2a, SU 2b, SU 4, SU 5, SU 6b, SU 8, SU 9, SU 11, SU 12, SU 13, SU 14, SU 15, SU 16, SU 17)](#N1097D) [11](#N1097D)

[4. ES 4: Powszechne zastosowanie przez pracowników zawodowych; Różne sektory (SU 0, SU 1, SU 13, SU 19, SU 20)](#N11497) [21](#N11497)

[5. ES 5: Powszechne zastosowanie przez pracowników zawodowych; Różne sektory (SU 0, SU 1, SU 5, SU 13, SU 19, SU 20)](#N11A79) [28](#N11A79)

[6. ES 6: Stosowanie przez konsumentów; Różne produkty (PC 0, PC 2, PC 4, PC 12, PC 16, PC 27, PC 35, PC 37)](#N120A3) [35](#N120A3)

**Rozdział 1. ES 1: Wytwarzanie**

**1.1. Tytuł sekcji**

Nazwa scenariusza narażenia: Manufacture

|  |  |
| --- | --- |
| **Środowisko** |  |
| 1: *Manufacturing of substances* | ERC 1 |
| **Pracownik** |  |
| 2: *Chemical production in closed process without likelihood of exposure or in containment conditions or processes with equivalent containment condition* | PROC 1 |
| 3: *Chemical production in closed continuous process with occasional controlled exposure or processes with equivalent containment condition* | PROC 2 |
| 4: *Manufacture in closed batch processes with occasional controlled exposure or processes with equivalent containment condition* | PROC 3 |
| 5: Chemical production where opportunity for exposure arises | PROC 4 |
| 6: *Transfer of a substance or mixture during process sampling at dedicated facilities* | PROC 8b, PROC 26 |
| 7: *Transfer of a substance or mixture during process sampling at non-dedicated facilities* | PROC 8a, PROC 26 |
| 8: *Transfer of substance or mixture into small containers (dedicated filling line, including weighing)* | PROC 9, PROC 26 |
| 9: Tabletting, compression, extrusion, pelettisation, granulation | PROC 14 |
| 10: Use as laboratory reagent | PROC 15, PROC 26 |
| 11: *Transfer of substance or mixture (charging/discharging) at non dedicated-facilities* | PROC 8a, PROC 26 |
| 12: *Transfer of substance or mixture (charging/discharging) at dedicated-facilities* | PROC 8b, PROC 26 |
| 13: *Equipment cleaning and maintenance at non-dedicated facility* | PROC 8a, PROC 28 |
| 14: Handling of solid inorganic substances at ambient temperature | PROC 26 |
| 15: *Manual maintenance (cleaning and repair) of machinery at non-dedicated facility* | PROC 28 |

**1.2. Warunki stosowania mające wpływ na narażenie**

**1.2.1. Kontrola narażenia pracowników**

**Warunki użytkowania mające zastosowanie do wszystkich scenariuszy cząstkowych**

|  |
| --- |
| **Charakterystyka produktu (wyrobu)** |
| Covers concentrations up to 100 % |
| *Solid, medium dustiness. Covers also liquid form* |
| **Ilość stosowana (lub zawarta w wyrobach), częstotliwość i czas trwania stosowania/narażenia** |
| Covers use up to 8 h/day |
| **Warunki i środki techniczne i organizacyjne** |
| Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). |
| Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. |
| **Warunki i środki w zakresie ochrony osobistej, higieny i oceny stanu zdrowia** |
| Use suitable eye protection. |
| Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. |
| **Inne warunki mające wpływ na narażenie pracowników** |
| Indoor use |
| Assumes process temperature up to 20 °C |

**1.3. Oszacowanie narażenia i podanie odnośnika do źródła**

**1.3.1. Narażenie pracowników: *Chemical production in closed process without likelihood of exposure or in containment conditions or processes with equivalent containment condition* (PROC 1)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 1.774 mg/m³ (Dane z pomiarów) | 0.355 |
| Drogi oddechowe; miejscowe, ostre | 1.774 mg/m³ (Dane z pomiarów) | 0.177 |

**1.3.2. Narażenie pracowników: *Chemical production in closed continuous process with occasional controlled exposure or processes with equivalent containment condition* (PROC 2)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 1.774 mg/m³ (Dane z pomiarów) | 0.355 |
| Drogi oddechowe; miejscowe, ostre | 1.774 mg/m³ (Dane z pomiarów) | 0.177 |

**1.3.3. Narażenie pracowników: *Manufacture in closed batch processes with occasional controlled exposure or processes with equivalent containment condition* (PROC 3)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 1.774 mg/m³ (Dane z pomiarów) | 0.355 |
| Drogi oddechowe; miejscowe, ostre | 1.774 mg/m³ (Dane z pomiarów) | 0.177 |

**1.3.4. Narażenie pracowników: Chemical production where opportunity for exposure arises (PROC 4)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 1.881 mg/m³ (Dane z pomiarów) | 0.376 |
| Drogi oddechowe; miejscowe, ostre | 1.881 mg/m³ (Dane z pomiarów) | 0.188 |

**1.3.5. Narażenie pracowników: *Transfer of a substance or mixture during process sampling at dedicated facilities* (PROC 8b, PROC 26)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 2.742 mg/m³ (Dane z pomiarów) | 0.548 |
| Drogi oddechowe; miejscowe, ostre | 2.742 mg/m³ (Dane z pomiarów) | 0.274 |

**1.3.6. Narażenie pracowników: *Transfer of a substance or mixture during process sampling at non-dedicated facilities* (PROC 8a, PROC 26)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 2.742 mg/m³ (Dane z pomiarów) | 0.548 |
| Drogi oddechowe; miejscowe, ostre | 2.742 mg/m³ (Dane z pomiarów) | 0.274 |

**1.3.7. Narażenie pracowników: *Transfer of substance or mixture into small containers (dedicated filling line, including weighing)* (PROC 9, PROC 26)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 2.742 mg/m³ (Dane z pomiarów) | 0.548 |
| Drogi oddechowe; miejscowe, ostre | 2.742 mg/m³ (Dane z pomiarów) | 0.274 |

**1.3.8. Narażenie pracowników: Tabletting, compression, extrusion, pelettisation, granulation (PROC 14)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 2.742 mg/m³ (Dane z pomiarów) | 0.548 |
| Drogi oddechowe; miejscowe, ostre | 2.742 mg/m³ (Dane z pomiarów) | 0.274 |

**1.3.9. Narażenie pracowników: Use as laboratory reagent (PROC 15, PROC 26)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 1.774 mg/m³ (Dane z pomiarów) | 0.355 |
| Drogi oddechowe; miejscowe, ostre | 1.774 mg/m³ (Dane z pomiarów) | 0.177 |

**1.3.10. Narażenie pracowników: *Transfer of substance or mixture (charging/discharging) at non dedicated-facilities* (PROC 8a, PROC 26)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 2.742 mg/m³ (Dane z pomiarów) | 0.548 |
| Drogi oddechowe; miejscowe, ostre | 2.742 mg/m³ (Dane z pomiarów) | 0.274 |

**1.3.11. Narażenie pracowników: *Transfer of substance or mixture (charging/discharging) at dedicated-facilities* (PROC 8b, PROC 26)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 2.742 mg/m³ (Dane z pomiarów) | 0.548 |
| Drogi oddechowe; miejscowe, ostre | 2.742 mg/m³ (Dane z pomiarów) | 0.274 |

**1.3.12. Narażenie pracowników: *Equipment cleaning and maintenance at non-dedicated facility* (PROC 8a, PROC 28)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 2.742 mg/m³ (Dane z pomiarów) | 0.548 |
| Drogi oddechowe; miejscowe, ostre | 2.742 mg/m³ (Dane z pomiarów) | 0.274 |

**1.3.13. Narażenie pracowników: Handling of solid inorganic substances at ambient temperature (PROC 26)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 2.742 mg/m³ (Dane z pomiarów) | 0.548 |
| Drogi oddechowe; miejscowe, ostre | 2.742 mg/m³ (Dane z pomiarów) | 0.274 |

**1.3.14. Narażenie pracowników: *Manual maintenance (cleaning and repair) of machinery at non-dedicated facility* (PROC 28)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 2.742 mg/m³ (Dane z pomiarów) | 0.548 |
| Drogi oddechowe; miejscowe, ostre | 2.742 mg/m³ (Dane z pomiarów) | 0.274 |

**1.4. Wytyczne dla dalszego użytkownika do celów oceny, czy pracuje w granicach ustanowionych w scenariuszu narażenia**

**Rozdział 2. ES 2: Formulacja lub przepakowanie**

**2.1. Tytuł sekcji**

Nazwa scenariusza narażenia: Formulation or re-packing; Distribution of substance

|  |  |
| --- | --- |
| **Środowisko** |  |
| 1: Formulation into mixture | ERC 2 |
| **Pracownik** |  |
| 2: *Chemical production in closed process without likelihood of exposure or in containment conditions.* | PROC 1 |
| 3: *Chemical production in closed continuous process with occasional controlled exposure.* | PROC 2 |
| 4: *Formulation in closed batch processes with occasional controlled exposure.* | PROC 3 |
| 5: *Chemical production where opportunity for exposure arises* | PROC 4 |
| 6: Mixing or blending in batch processes | PROC 5 |
| 7: *Transfer of a substance or mixture during process sampling at dedicated facilities* | PROC 8b, PROC 26 |
| 8: *Transfer of a substance or mixture during process sampling at non-dedicated facilities* | PROC 8a, PROC 26 |
| 9: *Transfer of substance or mixture into small containers (dedicated filling line, including weighing)* | PROC 9, PROC 26 |
| 10: Use as laboratory reagent | PROC 15, PROC 26 |
| 11: Tabletting, compression, extrusion, pelettisation, granulation | PROC 14 |
| 12: *Transfer of substance or mixture (charging/discharging) at non dedicated-facilities* | PROC 8a, PROC 26 |
| 13: *Transfer of substance or mixture (charging/discharging) at dedicated-facilities* | PROC 8b, PROC 26 |
| 14: *Equipment cleaning and maintenance at non-dedicated facility* | PROC 8a, PROC 28 |
| 15: Manual maintenance (cleaning and repair) of machinery | PROC 28 |

**2.2. Warunki stosowania mające wpływ na narażenie**

**2.2.1. Kontrola narażenia pracowników**

**Warunki użytkowania mające zastosowanie do wszystkich scenariuszy cząstkowych**

|  |
| --- |
| **Charakterystyka produktu (wyrobu)** |
| Covers concentrations up to 100 % |
| *Solid, medium dustiness. Covers also liquid form* |
| **Warunki i środki techniczne i organizacyjne** |
| Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. |
| **Warunki i środki w zakresie ochrony osobistej, higieny i oceny stanu zdrowia** |
| Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. |
| *Use suitable eye protection.* |
| **Inne warunki mające wpływ na narażenie pracowników** |
| Indoor use |
| Assumes process temperature up to 20 °C |

​

**Szczególne warunki stosowania odnoszące się do scenariusza szczątkowego**

|  |  |
| --- | --- |
| **Scenariusz cząstkowy** | **Środki szczególne** |
| ***Chemical production in closed process without likelihood of exposure or in containment conditions.* (PROC 1)** | Covers use up to 8 h/day  Provide a basic standard of general ventilation (1 to 3 air changes per hour). |
| ***Chemical production in closed continuous process with occasional controlled exposure.* (PROC 2)** | Covers use up to 8 h/day  Provide a basic standard of general ventilation (1 to 3 air changes per hour). |
| ***Formulation in closed batch processes with occasional controlled exposure.* (PROC 3)** | Covers use up to 8 h/day  Provide a basic standard of general ventilation (1 to 3 air changes per hour). |
| ***Chemical production where opportunity for exposure arises* (PROC 4)** | Covers use up to 8 h/day  Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).  *Respiratory protection (APF of 10) is to be worn in those case where there is potential for peak exposure. Alternatively, good general ventilation with a minimum of 5-10 air changes per air can be applied.* |
| **Mixing or blending in batch processes (PROC 5)** | Covers use up to 8 h/day  Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).  *Respiratory protection (APF of 10) is to be worn in those case where there is potential for peak exposure. Alternatively, good general ventilation with a minimum of 5-10 air changes per air can be applied.* |
| ***Transfer of a substance or mixture during process sampling at dedicated facilities* (PROC 8b, PROC 26)** | Covers use up to 8 h/day  Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). |
| ***Transfer of a substance or mixture during process sampling at non-dedicated facilities* (PROC 8a, PROC 26)** | Covers use up to 1 h/day  Provide a basic standard of general ventilation (1 to 3 air changes per hour).  *Respiratory protection (APF of 10) is to be worn in those case where there is potential for peak exposure. Alternatively, good general ventilation with a minimum of 5-10 air changes per air can be applied.* |
| ***Transfer of substance or mixture into small containers (dedicated filling line, including weighing)* (PROC 9, PROC 26)** | Covers use up to 8 h/day  Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).  *Respiratory protection (APF of 10) is to be worn in those case where there is potential for peak exposure. Alternatively, good general ventilation with a minimum of 5-10 air changes per air can be applied.* |
| **Use as laboratory reagent (PROC 15, PROC 26)** | Covers use up to 8 h/day  Provide a basic standard of general ventilation (1 to 3 air changes per hour). |
| **Tabletting, compression, extrusion, pelettisation, granulation (PROC 14)** | Covers use up to 8 h/day  Provide a basic standard of general ventilation (1 to 3 air changes per hour). |
| ***Transfer of substance or mixture (charging/discharging) at non dedicated-facilities* (PROC 8a, PROC 26)** | Covers use up to 8 h/day  Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).  *Respiratory protection (APF of 10) is to be worn in those case where there is potential for peak exposure. Alternatively, good general ventilation with a minimum of 5-10 air changes per air can be applied.* |
| ***Transfer of substance or mixture (charging/discharging) at dedicated-facilities* (PROC 8b, PROC 26)** | Covers use up to 8 h/day  Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). |
| ***Equipment cleaning and maintenance at non-dedicated facility* (PROC 8a, PROC 28)** | Covers use up to 8 h/day  Provide a basic standard of general ventilation (1 to 3 air changes per hour).  *Handle substance within a closed system [ES47] Drain down and flush system prior to equipment break-in or maintenance [E55] Transfer via enclosed lines [E52]*  *Respiratory protection (APF of 10) is to be worn in those case where there is potential for peak exposure. Alternatively, good general ventilation with a minimum of 5-10 air changes per air can be applied.* |
| **Manual maintenance (cleaning and repair) of machinery (PROC 28)** | Covers use up to 8 h/day  Provide a basic standard of general ventilation (1 to 3 air changes per hour).  *Handle substance within a closed system [ES47] Drain down and flush system prior to equipment break-in or maintenance [E55] Transfer via enclosed lines [E52]*  *Respiratory protection (APF of 10) is to be worn in those case where there is potential for peak exposure. Alternatively, good general ventilation with a minimum of 5-10 air changes per air can be applied.* |

**2.3. Oszacowanie narażenia i podanie odnośnika do źródła**

**2.3.1. Narażenie pracowników: *Chemical production in closed process without likelihood of exposure or in containment conditions.* (PROC 1)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.01 mg/m³ (TRA Workers 3.0) | < 0.01 |
| Drogi oddechowe; miejscowe, ostre | 0.04 mg/m³ (TRA Workers 3.0) | < 0.01 |

**2.3.2. Narażenie pracowników: *Chemical production in closed continuous process with occasional controlled exposure.* (PROC 2)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.5 mg/m³ (TRA Workers 3.0) | 0.1 |
| Drogi oddechowe; miejscowe, ostre | 2 mg/m³ (TRA Workers 3.0) | 0.2 |

**2.3.3. Narażenie pracowników: *Formulation in closed batch processes with occasional controlled exposure.* (PROC 3)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 1 mg/m³ (TRA Workers 3.0) | 0.2 |
| Drogi oddechowe; miejscowe, ostre | 4 mg/m³ (TRA Workers 3.0) | 0.4 |

**2.3.4. Narażenie pracowników: *Chemical production where opportunity for exposure arises* (PROC 4)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.35 mg/m³ (TRA Workers 3.0) | 0.07 |
| Drogi oddechowe; miejscowe, ostre | 1.4 mg/m³ (TRA Workers 3.0) | 0.14 |

**2.3.5. Narażenie pracowników: Mixing or blending in batch processes (PROC 5)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.35 mg/m³ (TRA Workers 3.0) | 0.07 |
| Drogi oddechowe; miejscowe, ostre | 1.4 mg/m³ (TRA Workers 3.0) | 0.14 |

**2.3.6. Narażenie pracowników: *Transfer of a substance or mixture during process sampling at dedicated facilities* (PROC 8b, PROC 26)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.7 mg/m³ (TRA Workers 3.0) | 0.14 |
| Drogi oddechowe; miejscowe, ostre | 2.8 mg/m³ (TRA Workers 3.0) | 0.28 |

**2.3.7. Narażenie pracowników: *Transfer of a substance or mixture during process sampling at non-dedicated facilities* (PROC 8a, PROC 26)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.1 mg/m³ (TRA Workers 3.0) | 0.02 |
| Drogi oddechowe; miejscowe, ostre | 2 mg/m³ (TRA Workers 3.0) | 0.2 |

**2.3.8. Narażenie pracowników: *Transfer of substance or mixture into small containers (dedicated filling line, including weighing)* (PROC 9, PROC 26)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.35 mg/m³ (TRA Workers 3.0) | 0.07 |
| Drogi oddechowe; miejscowe, ostre | 1.4 mg/m³ (TRA Workers 3.0) | 0.14 |

**2.3.9. Narażenie pracowników: Use as laboratory reagent (PROC 15, PROC 26)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.5 mg/m³ (TRA Workers 3.0) | 0.1 |
| Drogi oddechowe; miejscowe, ostre | 2 mg/m³ (TRA Workers 3.0) | 0.2 |

**2.3.10. Narażenie pracowników: Tabletting, compression, extrusion, pelettisation, granulation (PROC 14)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 1 mg/m³ (TRA Workers 3.0) | 0.2 |
| Drogi oddechowe; miejscowe, ostre | 4 mg/m³ (TRA Workers 3.0) | 0.4 |

**2.3.11. Narażenie pracowników: *Transfer of substance or mixture (charging/discharging) at non dedicated-facilities* (PROC 8a, PROC 26)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.35 mg/m³ (TRA Workers 3.0) | 0.07 |
| Drogi oddechowe; miejscowe, ostre | 1.4 mg/m³ (TRA Workers 3.0) | 0.14 |

**2.3.12. Narażenie pracowników: *Transfer of substance or mixture (charging/discharging) at dedicated-facilities* (PROC 8b, PROC 26)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.7 mg/m³ (TRA Workers 3.0) | 0.14 |
| Drogi oddechowe; miejscowe, ostre | 2.8 mg/m³ (TRA Workers 3.0) | 0.28 |

**2.3.13. Narażenie pracowników: *Equipment cleaning and maintenance at non-dedicated facility* (PROC 8a, PROC 28)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.5 mg/m³ (TRA Workers 3.0) | 0.1 |
| Drogi oddechowe; miejscowe, ostre | 2 mg/m³ (TRA Workers 3.0) | 0.2 |

**2.3.14. Narażenie pracowników: Manual maintenance (cleaning and repair) of machinery (PROC 28)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.5 mg/m³ (PROC 8a estimate used to cover PROC 28) | 0.1 |
| Drogi oddechowe; miejscowe, ostre | 2 mg/m³ (PROC 8a estimate used to cover PROC 28) | 0.2 |

**2.4. Wytyczne dla dalszego użytkownika do celów oceny, czy pracuje w granicach ustanowionych w scenariuszu narażenia**

**Rozdział 3. ES 3: Zastosowanie w obiektach przemysłowych; Różne sektory (SU 1, SU 2a, SU 2b, SU 4, SU 5, SU 6b, SU 8, SU 9, SU 11, SU 12, SU 13, SU 14, SU 15, SU 16, SU 17)**

**3.1. Tytuł sekcji**

Nazwa scenariusza narażenia: *Use at industrial site (e.g. Industrial Indoor use as Chemical Intermediate and Process aid, Industrial Outdoor use)*

Sektor zastosowań: Rolnictwo, leśnictwo i rybactwo (SU 1), Górnictwo (wyłączając górnictwo morskie) (SU 2a), Górnictwo morskie (SU 2b), Produkcja artykułów spożywczych (SU 4), Produkcja wyrobów włókienniczych, skór, futer (SU 5), Produkcja masy włóknistej, papieru i produktów z papieru (SU 6b), Masowa, wielkoskalowa produkcja chemikaliów (w tym produktów ropy naftowej) (SU 8), Produkcja chemikaliów wysokowartościowych (SU 9), Produkcja produktów z gumy (SU 11), Produkcja produktów z tworzyw sztucznych, w tym sporządzanie mieszanek i konwersja (SU 12), Produkcja produktów z pozostałych mineralnych surowców niemetalicznych, np. gipsów, cementu (SU 13), Produkcja metali nieszlachetnych, włączając stopy (SU 14), Produkcja metalowych produktów gotowych, z wyłączeniem maszyn i urządzeń (SU 15), Produkcja komputerów, produktów elektronicznych i optycznych, produkcja urządzeń elektrycznych (SU 16), Produkcja ogólna, np. maszyn, urządzeń, pojazdów, innych urządzeń transportowych (SU 17)

|  |  |
| --- | --- |
| **Środowisko** |  |
| 1: Use as an intermediate | ERC 6a |
| 2: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) | ERC 4 |
| **Pracownik** |  |
| 3: *Chemical production in closed process without likelihood of exposure or in containment conditions or processes with equivalent containment conditions* | PROC 1 |
| 4: *Chemical production in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions* | PROC 2 |
| 5: *Manufacture or formulation in closed batch processes with occasional controlled exposure or processes with equivalent containment condition* | PROC 3 |
| 6: Chemical production where opportunity for exposure arises | PROC 4 |
| 7: Mixing or blending in batch processes | PROC 5 |
| 8: Calendering operations | PROC 6 |
| 9: Indoor use; Industrial spraying; Solid in solution | PROC 7 |
| 10: Outdoor use; Industrial spraying | PROC 7 |
| 11: Outdoor use; Industrial spraying | PROC 7 |
| 12: *Transfer of a substance or mixture during process sampling at non-dedicated facilities with a local exhaust ventilation* | PROC 8a, PROC 26 |
| 13: *Transfer of a substance or mixture during process sampling at non-dedicated facilities without a local exhaust ventilation* | PROC 8a, PROC 26 |
| 14: *Transfer of a substance or mixture during process sampling at dedicated facilities with a local exhaust ventilation* | PROC 8b, PROC 26 |
| 15: *Transfer of a substance or mixture during process sampling at dedicated facilities without a local exhaust ventilation* | PROC 8b, PROC 26 |
| 16: *Transfer of substance or mixture (charging/discharging) at non-dedicated facilities with a local exhaust ventilation.* | PROC 8a, PROC 26 |
| 17: *Transfer of substance or mixture (charging/discharging) at non-dedicated facilities without a local exhaust ventilation.* | PROC 8a, PROC 26 |
| 18: *Transfer of substance or mixture (charging/discharging) at dedicated facilities with a local exhaust ventilation.* | PROC 8b, PROC 26 |
| 19: *Transfer of substance or mixture (charging/discharging) at dedicated facilities without a local exhaust ventilation.* | PROC 8b, PROC 26 |
| 20: *Equipment cleaning and maintenance at non-dedicated facility* | PROC 8a, PROC 28 |
| 21: *Transfer of substance or mixture into small containers (dedicated filling line, including weighing) at facilities with a local exhaust ventilation* | PROC 9, PROC 26, PROC 27b |
| 22: *Transfer of substance or mixture into small containers (dedicated filling line, including weighing) at facilities without a local exhaust ventilation* | PROC 9, PROC 26 |
| 23: Roller application or brushing | PROC 10 |
| 24: Treatment of articles by dipping and pouring | PROC 13 |
| 25: Tabletting, compression, extrusion, pelettisation, granulation | PROC 14 |
| 26: Use as laboratory reagent | PROC 15, PROC 26, PROC 27b |
| 27: *Manufacturing and processing of minerals and/or metals at substantially elevated temperature (> melting point - High fugacity)* | PROC 22, PROC 27a |
| 28: *Manufacturing and processing of minerals and/or metals at substantially elevated temperature (>= melting point. Medium fugacity)* | PROC 22, PROC 27a |
| 29: *Open processing and transfer operations at substantially elevated temperature (=< melting point - Medium fugacity)* | PROC 23, PROC 27a |
| 30: *Open processing and transfer operations at substantially elevated temperature (> melting point - High fugacity)* | PROC 23, PROC 27a |
| 31: *Manual maintenance (cleaning and repair) of machinery at noon-dedicated facilities* | PROC 28 |

**3.2. Warunki stosowania mające wpływ na narażenie**

**3.2.1. Kontrola narażenia pracowników**

**Warunki użytkowania mające zastosowanie do wszystkich scenariuszy cząstkowych**

|  |
| --- |
| **Warunki i środki techniczne i organizacyjne** |
| Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. |
| **Warunki i środki w zakresie ochrony osobistej, higieny i oceny stanu zdrowia** |
| Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. |
| *Use suitable eye protection.* |
| **Inne warunki mające wpływ na narażenie pracowników** |
| Assumes process temperature up to 20 °C |

​

**Szczególne warunki stosowania odnoszące się do scenariusza szczątkowego**

|  |  |
| --- | --- |
| **Scenariusz cząstkowy** | **Środki szczególne** |
| ***Chemical production in closed process without likelihood of exposure or in containment conditions or processes with equivalent containment conditions* (PROC 1)** | Covers concentrations up to 100 %  *Solid, medium dustiness. Covers also liquid form*  Covers use up to 8 h/day  Provide a basic standard of general ventilation (1 to 3 air changes per hour).  Indoor use |
| ***Chemical production in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions* (PROC 2)** | Covers concentrations up to 100 %  *Solid, medium dustiness. Covers also liquid form*  Covers use up to 8 h/day  Provide a basic standard of general ventilation (1 to 3 air changes per hour).  Indoor use |
| ***Manufacture or formulation in closed batch processes with occasional controlled exposure or processes with equivalent containment condition* (PROC 3)** | Covers concentrations up to 100 %  *Solid, medium dustiness. Covers also liquid form*  Covers use up to 8 h/day  Provide a basic standard of general ventilation (1 to 3 air changes per hour).  Indoor use |
| **Chemical production where opportunity for exposure arises (PROC 4)** | Covers concentrations up to 100 %  *Solid, medium dustiness. Covers also liquid form*  Covers use up to 8 h/day  Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).  Local exhaust ventilation; Inhalation - minimum efficiency of 90 %  Indoor use |
| **Mixing or blending in batch processes (PROC 5)** | Covers concentrations up to 100 %  *Solid, medium dustiness. Covers also liquid form*  Covers use up to 8 h/day  Wear suitable respiratory protection.; Inhalation - minimum efficiency of 90 %; For further specification, refer to section 8 of the SDS.  Outdoor use |
| **Calendering operations (PROC 6)** | Covers concentrations up to 100 %  *Solid, medium dustiness. Covers also liquid form*  Covers use up to 8 h/day  Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).  *Respiratory protection (APF of 10) is to be worn in those case where there is potential for peak exposure. Alternatively, good general ventilation with a minimum of 5-10 air changes per air can be applied.*  Indoor use |
| **Indoor use; Industrial spraying; Solid in solution (PROC 7)** | Covers concentrations up to 35 %  *Physical form of the product is assumed as liquid, this is conservative as it is a solid in a liquid with a very low vapour pressure.*  Covers use up to 2 h/day  Provide a basic standard of general ventilation (1 to 3 air changes per hour).  *Covers exposure in the presence of local exhaust ventilation of minimum 95% efficiency or respiratory protection with minimum 90% efficiency (e.g. APF of10)*  *covers spraying with moderate application rate (0.3-3 L/minute)*  *Covers spraying direction only horizontal or downward*  Indoor use |
| **Outdoor use; Industrial spraying (PROC 7)** | Covers concentrations up to 35 %  *Physical form of the product is assumed as liquid, this is conservative as it is a solid in a liquid with a very low vapour pressure.*  Covers use up to 0.25 h/day  *Covers activity where the primary emission source is located in the breathing zone of the worker (i.e. the volume of air within 1 metre in any direction of the worker’s head)*  *covers any spraying direction*  *covers spraying with high compressed air*  *covers high spraying application rate (> 3 L/minute)*  *Covers spraying activity wearing respiratory protection with minimum efficiency of 95% (i.e. APF of 20)*  Outdoor use |
| **Outdoor use; Industrial spraying (PROC 7)** | Covers concentrations up to 35 %  *Physical form of the product is assumed as liquid, this is conservative as it is a solid in a liquid with a very low vapour pressure.*  Covers use up to 2 h/day  *Covers activity where the primary emission source is located out the breathing zone of the worker (i.e. the volume of air is more than 1 metre in any direction of the worker’s head)*  *Covers spraying direction only horizontal or downward*  *covers spraying with high compressed air*  *covers high spraying application rate (> 3 L/minute)*  Outdoor use  *covers partial personal enclosure (e.g. truck cabin)* |
| ***Transfer of a substance or mixture during process sampling at non-dedicated facilities with a local exhaust ventilation* (PROC 8a, PROC 26)** | Covers concentrations up to 100 %  *Solid, medium dustiness. Covers also liquid form*  Covers use up to 1 h/day  Local exhaust ventilation; Inhalation - minimum efficiency of 90 %  Provide a basic standard of general ventilation (1 to 3 air changes per hour).  Indoor use |
| ***Transfer of a substance or mixture during process sampling at non-dedicated facilities without a local exhaust ventilation* (PROC 8a, PROC 26)** | Covers concentrations up to 100 %  *Solid, medium dustiness. Covers also liquid form*  Covers use up to 1 h/day  Provide a basic standard of general ventilation (1 to 3 air changes per hour).  *Respiratory protection (APF of 10) is to be worn in those case where there is potential for peak exposure. Alternatively, good general ventilation with a minimum of 5-10 air changes per air can be applied.*  Indoor use |
| ***Transfer of a substance or mixture during process sampling at dedicated facilities with a local exhaust ventilation* (PROC 8b, PROC 26)** | Covers concentrations up to 100 %  *Solid, medium dustiness. Covers also liquid form*  Covers use up to 8 h/day  Local exhaust ventilation; Inhalation - minimum efficiency of 95 %  Provide a basic standard of general ventilation (1 to 3 air changes per hour).  Indoor use |
| ***Transfer of a substance or mixture during process sampling at dedicated facilities without a local exhaust ventilation* (PROC 8b, PROC 26)** | Covers concentrations up to 100 %  *Solid, medium dustiness. Covers also liquid form*  Covers use up to 8 h/day  Provide a basic standard of general ventilation (1 to 3 air changes per hour).  Indoor use |
| ***Transfer of substance or mixture (charging/discharging) at non-dedicated facilities with a local exhaust ventilation.* (PROC 8a, PROC 26)** | Covers concentrations up to 100 %  *Solid, medium dustiness. Covers also liquid form*  Covers use up to 8 h/day  Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).  Local exhaust ventilation; Inhalation - minimum efficiency of 90 %  Indoor use |
| ***Transfer of substance or mixture (charging/discharging) at non-dedicated facilities without a local exhaust ventilation.* (PROC 8a, PROC 26)** | Covers concentrations up to 100 %  *Solid, medium dustiness. Covers also liquid form*  Covers use up to 8 h/day  Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).  *Respiratory protection (APF of 10) is to be worn in those case where there is potential for peak exposure. Alternatively, good general ventilation with a minimum of 5-10 air changes per air can be applied.*  Indoor or outdoor use |
| ***Transfer of substance or mixture (charging/discharging) at dedicated facilities with a local exhaust ventilation.* (PROC 8b, PROC 26)** | Covers concentrations up to 100 %  *Solid, medium dustiness. Covers also liquid form*  Covers use up to 8 h/day  Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).  Local exhaust ventilation; Inhalation - minimum efficiency of 95 %  Indoor use |
| ***Transfer of substance or mixture (charging/discharging) at dedicated facilities without a local exhaust ventilation.* (PROC 8b, PROC 26)** | Covers concentrations up to 100 %  *Solid, medium dustiness. Covers also liquid form*  Covers use up to 8 h/day  Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).  Indoor or outdoor use |
| ***Equipment cleaning and maintenance at non-dedicated facility* (PROC 8a, PROC 28)** | Covers concentrations up to 100 %  *Solid, medium dustiness. Covers also liquid form*  Covers use up to 8 h/day  Provide a basic standard of general ventilation (1 to 3 air changes per hour).  Local exhaust ventilation; Inhalation - minimum efficiency of 90 %  *Handle substance within a closed system [ES47] Drain down and flush system prior to equipment break-in or maintenance [E55] Transfer via enclosed lines [E52]*  Indoor use |
| ***Transfer of substance or mixture into small containers (dedicated filling line, including weighing) at facilities with a local exhaust ventilation* (PROC 9, PROC 26, PROC 27b)** | Covers concentrations up to 100 %  *Solid, medium dustiness. Covers also liquid form*  Covers use up to 8 h/day  Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).  Local exhaust ventilation; Inhalation - minimum efficiency of 90 %  Indoor use |
| ***Transfer of substance or mixture into small containers (dedicated filling line, including weighing) at facilities without a local exhaust ventilation* (PROC 9, PROC 26)** | Covers concentrations up to 100 %  *Solid, medium dustiness. Covers also liquid form*  Covers use up to 8 h/day  Provide a basic standard of general ventilation (1 to 3 air changes per hour).  *Respiratory protection (APF of 10) is to be worn in those case where there is potential for peak exposure. Alternatively, good general ventilation with a minimum of 5-10 air changes per air can be applied.*  Indoor or outdoor use |
| **Roller application or brushing (PROC 10)** | Covers concentrations up to 100 %  *Solid, medium dustiness. Covers also liquid form*  Covers use up to 8 h/day  Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).  *Respiratory protection (APF of 10) is to be worn in those case where there is potential for peak exposure. Alternatively, good general ventilation with a minimum of 5-10 air changes per air can be applied.*  Indoor use |
| **Treatment of articles by dipping and pouring (PROC 13)** | Solid, medium dustiness  *Solid, medium dustiness. Covers also liquid form*  Covers use up to 8 h/day  Provide a basic standard of general ventilation (1 to 3 air changes per hour).  Indoor use |
| **Tabletting, compression, extrusion, pelettisation, granulation (PROC 14)** | Covers concentrations up to 100 %  *Solid, medium dustiness. Covers also liquid form*  Covers use up to 8 h/day  Provide a basic standard of general ventilation (1 to 3 air changes per hour).  Indoor use |
| **Use as laboratory reagent (PROC 15, PROC 26, PROC 27b)** | Covers concentrations up to 100 %  *Solid, medium dustiness. Covers also liquid form*  Covers use up to 8 h/day  Provide a basic standard of general ventilation (1 to 3 air changes per hour).  Indoor use |
| ***Manufacturing and processing of minerals and/or metals at substantially elevated temperature (> melting point - High fugacity)* (PROC 22, PROC 27a)** | Covers concentrations up to 100 %  *Solid, medium dustiness. Covers also liquid form*  Covers use up to 8 h/day  Provide a basic standard of general ventilation (1 to 3 air changes per hour).  Local exhaust ventilation; Inhalation - minimum efficiency of 90 %  Indoor use |
| ***Manufacturing and processing of minerals and/or metals at substantially elevated temperature (>= melting point. Medium fugacity)* (PROC 22, PROC 27a)** | Covers concentrations up to 100 %  *Solid, medium dustiness. Covers also liquid form*  Covers use up to 8 h/day  Provide a basic standard of general ventilation (1 to 3 air changes per hour).  Local exhaust ventilation; Inhalation - minimum efficiency of 90 %  Indoor use |
| ***Open processing and transfer operations at substantially elevated temperature (=< melting point - Medium fugacity)* (PROC 23, PROC 27a)** | Covers concentrations up to 100 %  *Solid, medium dustiness. Covers also liquid form*  Covers use up to 8 h/day  Provide a basic standard of general ventilation (1 to 3 air changes per hour).  Indoor use |
| ***Open processing and transfer operations at substantially elevated temperature (> melting point - High fugacity)* (PROC 23, PROC 27a)** | Covers concentrations up to 100 %  *Solid, medium dustiness. Covers also liquid form*  Covers use up to 8 h/day  Provide a good standard of controlled ventilation (5 to 10 air changes per hour).  Local exhaust ventilation; Inhalation - minimum efficiency of 90 %  Indoor use |
| ***Manual maintenance (cleaning and repair) of machinery at noon-dedicated facilities* (PROC 28)** | Covers concentrations up to 100 %  *Solid, medium dustiness. Covers also liquid form*  Covers use up to 8 h/day  Provide a basic standard of general ventilation (1 to 3 air changes per hour).  Local exhaust ventilation; Inhalation - minimum efficiency of %  *Handle substance within a closed system [ES47] Drain down and flush system prior to equipment break-in or maintenance [E55] Transfer via enclosed lines [E52]*  Indoor use |

**3.3. Oszacowanie narażenia i podanie odnośnika do źródła**

**3.3.1. Narażenie pracowników: *Chemical production in closed process without likelihood of exposure or in containment conditions or processes with equivalent containment conditions* (PROC 1)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.01 mg/m³ (TRA Workers 3.0) | < 0.01 |
| Drogi oddechowe; miejscowe, ostre | 0.04 mg/m³ (TRA Workers 3.0) | < 0.01 |

**3.3.2. Narażenie pracowników: *Chemical production in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions* (PROC 2)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.5 mg/m³ (TRA Workers 3.0) | 0.1 |
| Drogi oddechowe; miejscowe, ostre | 2 mg/m³ (TRA Workers 3.0) | 0.2 |

**3.3.3. Narażenie pracowników: *Manufacture or formulation in closed batch processes with occasional controlled exposure or processes with equivalent containment condition* (PROC 3)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 1 mg/m³ (TRA Workers 3.0) | 0.2 |
| Drogi oddechowe; miejscowe, ostre | 4 mg/m³ (TRA Workers 3.0) | 0.4 |

**3.3.4. Narażenie pracowników: Chemical production where opportunity for exposure arises (PROC 4)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.35 mg/m³ (TRA Workers 3.0) | 0.07 |
| Drogi oddechowe; miejscowe, ostre | 1.4 mg/m³ (TRA Workers 3.0) | 0.14 |

**3.3.5. Narażenie pracowników: Mixing or blending in batch processes (PROC 5)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.35 mg/m³ (TRA Workers 3.0) | 0.07 |
| Drogi oddechowe; miejscowe, ostre | 1.4 mg/m³ (TRA Workers 3.0) | 0.14 |

**3.3.6. Narażenie pracowników: Calendering operations (PROC 6)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.35 mg/m³ (TRA Workers 3.0) | 0.07 |
| Drogi oddechowe; miejscowe, ostre | 1.4 mg/m³ (TRA Workers 3.0) | 0.14 |

**3.3.7. Narażenie pracowników: Indoor use; Industrial spraying; Solid in solution (PROC 7)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 1.2 mg/m³ (ART) | 0.24 |
| Drogi oddechowe; miejscowe, ostre | 9.6 mg/m³ (ART) | 0.96 |

**3.3.8. Narażenie pracowników: Outdoor use; Industrial spraying (PROC 7)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 1.2 mg/m³ (ART) | 0.24 |
| Drogi oddechowe; miejscowe, ostre | 9.6 mg/m³ (ART) | 0.96 |

**3.3.9. Narażenie pracowników: Outdoor use; Industrial spraying (PROC 7)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 1.2 mg/m³ (ART) | 0.24 |
| Drogi oddechowe; miejscowe, ostre | 9.6 mg/m³ (ART) | 0.96 |

**3.3.10. Narażenie pracowników: *Transfer of a substance or mixture during process sampling at non-dedicated facilities with a local exhaust ventilation* (PROC 8a, PROC 26)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.1 mg/m³ (TRA Workers 3.0) | 0.02 |
| Drogi oddechowe; miejscowe, ostre | 2 mg/m³ (TRA Workers 3.0) | 0.2 |

**3.3.11. Narażenie pracowników: *Transfer of a substance or mixture during process sampling at non-dedicated facilities without a local exhaust ventilation* (PROC 8a, PROC 26)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.1 mg/m³ (TRA Workers 3.0) | 0.02 |
| Drogi oddechowe; miejscowe, ostre | 2 mg/m³ (TRA Workers 3.0) | 0.2 |

**3.3.12. Narażenie pracowników: *Transfer of a substance or mixture during process sampling at dedicated facilities with a local exhaust ventilation* (PROC 8b, PROC 26)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.05 mg/m³ (TRA Workers 3.0) | 0.01 |
| Drogi oddechowe; miejscowe, ostre | 0.2 mg/m³ (TRA Workers 3.0) | 0.02 |

**3.3.13. Narażenie pracowników: *Transfer of a substance or mixture during process sampling at dedicated facilities without a local exhaust ventilation* (PROC 8b, PROC 26)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 1 mg/m³ (TRA Workers 3.0) | 0.2 |
| Drogi oddechowe; miejscowe, ostre | 4 mg/m³ (TRA Workers 3.0) | 0.4 |

**3.3.14. Narażenie pracowników: *Transfer of substance or mixture (charging/discharging) at non-dedicated facilities with a local exhaust ventilation.* (PROC 8a, PROC 26)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.35 mg/m³ (TRA Workers 3.0) | 0.07 |
| Drogi oddechowe; miejscowe, ostre | 1.4 mg/m³ (TRA Workers 3.0) | 0.14 |

**3.3.15. Narażenie pracowników: *Transfer of substance or mixture (charging/discharging) at non-dedicated facilities without a local exhaust ventilation.* (PROC 8a, PROC 26)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.35 mg/m³ (TRA Workers 3.0) | 0.07 |
| Drogi oddechowe; miejscowe, ostre | 1.4 mg/m³ (TRA Workers 3.0) | 0.14 |

**3.3.16. Narażenie pracowników: *Transfer of substance or mixture (charging/discharging) at dedicated facilities with a local exhaust ventilation.* (PROC 8b, PROC 26)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.035 mg/m³ (TRA Workers 3.0) | < 0.01 |
| Drogi oddechowe; miejscowe, ostre | 0.14 mg/m³ (TRA Workers 3.0) | 0.014 |

**3.3.17. Narażenie pracowników: *Transfer of substance or mixture (charging/discharging) at dedicated facilities without a local exhaust ventilation.* (PROC 8b, PROC 26)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.7 mg/m³ (TRA Workers 3.0) | 0.14 |
| Drogi oddechowe; miejscowe, ostre | 2.8 mg/m³ (TRA Workers 3.0) | 0.28 |

**3.3.18. Narażenie pracowników: *Equipment cleaning and maintenance at non-dedicated facility* (PROC 8a, PROC 28)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.5 mg/m³ (TRA Workers 3.0) | 0.1 |
| Drogi oddechowe; miejscowe, ostre | 2 mg/m³ (TRA Workers 3.0) | 0.2 |

**3.3.19. Narażenie pracowników: *Transfer of substance or mixture into small containers (dedicated filling line, including weighing) at facilities with a local exhaust ventilation* (PROC 9, PROC 26, PROC 27b)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.35 mg/m³ (TRA Workers 3.0) | 0.07 |
| Drogi oddechowe; miejscowe, ostre | 1.4 mg/m³ (TRA Workers 3.0) | 0.14 |

**3.3.20. Narażenie pracowników: *Transfer of substance or mixture into small containers (dedicated filling line, including weighing) at facilities without a local exhaust ventilation* (PROC 9, PROC 26)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.5 mg/m³ (TRA Workers 3.0) | 0.1 |
| Drogi oddechowe; miejscowe, ostre | 2 mg/m³ (TRA Workers 3.0) | 0.2 |

**3.3.21. Narażenie pracowników: Roller application or brushing (PROC 10)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.35 mg/m³ (TRA Workers 3.0) | 0.07 |
| Drogi oddechowe; miejscowe, ostre | 1.4 mg/m³ (TRA Workers 3.0) | 0.14 |

**3.3.22. Narażenie pracowników: Treatment of articles by dipping and pouring (PROC 13)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 1 mg/m³ (TRA Workers 3.0) | 0.2 |
| Drogi oddechowe; miejscowe, ostre | 4 mg/m³ (TRA Workers 3.0) | 0.4 |

**3.3.23. Narażenie pracowników: Tabletting, compression, extrusion, pelettisation, granulation (PROC 14)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 1 mg/m³ (TRA Workers 3.0) | 0.2 |
| Drogi oddechowe; miejscowe, ostre | 4 mg/m³ (TRA Workers 3.0) | 0.4 |

**3.3.24. Narażenie pracowników: Use as laboratory reagent (PROC 15, PROC 26, PROC 27b)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.5 mg/m³ (TRA Workers 3.0) | 0.1 |
| Drogi oddechowe; miejscowe, ostre | 2 mg/m³ (TRA Workers 3.0) | 0.2 |

**3.3.25. Narażenie pracowników: *Manufacturing and processing of minerals and/or metals at substantially elevated temperature (> melting point - High fugacity)* (PROC 22, PROC 27a)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.1 mg/m³ (TRA Workers 3.0) | 0.02 |
| Drogi oddechowe; miejscowe, ostre | 0.4 mg/m³ (TRA Workers 3.0) | 0.04 |

**3.3.26. Narażenie pracowników: *Manufacturing and processing of minerals and/or metals at substantially elevated temperature (>= melting point. Medium fugacity)* (PROC 22, PROC 27a)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.1 mg/m³ (TRA Workers 3.0) | 0.02 |
| Drogi oddechowe; miejscowe, ostre | 0.4 mg/m³ (TRA Workers 3.0) | 0.04 |

**3.3.27. Narażenie pracowników: *Open processing and transfer operations at substantially elevated temperature (=< melting point - Medium fugacity)* (PROC 23, PROC 27a)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 1 mg/m³ (TRA Workers 3.0) | 0.2 |
| Drogi oddechowe; miejscowe, ostre | 4 mg/m³ (TRA Workers 3.0) | 0.4 |

**3.3.28. Narażenie pracowników: *Open processing and transfer operations at substantially elevated temperature (> melting point - High fugacity)* (PROC 23, PROC 27a)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.03 mg/m³ (TRA Workers 3.0) | < 0.01 |
| Drogi oddechowe; miejscowe, ostre | 0.12 mg/m³ (TRA Workers 3.0) | 0.012 |

**3.3.29. Narażenie pracowników: *Manual maintenance (cleaning and repair) of machinery at noon-dedicated facilities* (PROC 28)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.5 mg/m³ (ECETOC TRA Workers) | 0.1 |
| Drogi oddechowe; miejscowe, ostre | 2 mg/m³ (ECETOC TRA Workers) | 0.2 |

**3.4. Wytyczne dla dalszego użytkownika do celów oceny, czy pracuje w granicach ustanowionych w scenariuszu narażenia**

Narzędzie do czyszczenia powierzchni: For the evaluation of spraying activities the ART (Advanced Reach Tool) modeling tool has been used. In case the DU cannot demonstrate safe use with the conditions currently presented in this SDS Annex, the ART modeling Tool can be used as scaling tool.

**Rozdział 4. ES 4: Powszechne zastosowanie przez pracowników zawodowych; Różne sektory (SU 0, SU 1, SU 13, SU 19, SU 20)**

**4.1. Tytuł sekcji**

Nazwa scenariusza narażenia: Professional use; Indoor use

Sektor zastosowań: Inne (SU 0), Rolnictwo, leśnictwo i rybactwo (SU 1), Produkcja produktów z pozostałych mineralnych surowców niemetalicznych, np. gipsów, cementu (SU 13), Budownictwo i roboty budowlane (SU 19), Opieka zdrowotna (SU 20)

|  |  |
| --- | --- |
| **Środowisko** |  |
| 1: Indoor use; Professional use | ERC 8a |
| **Pracownik** |  |
| 2: *Chemical production in closed process without likelihood of exposure or in containment conditions or processes with equivalent containment conditions* | PROC 1 |
| 3: *Chemical production in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions* | PROC 2 |
| 4: *Manufacture or formulation in closed batch processes with occasional controlled exposure or processes with equivalent containment condition* | PROC 3 |
| 5: Chemical production where opportunity for exposure arises | PROC 4 |
| 6: Mixing or blending in batch processes | PROC 5 |
| 7: *Transfer of substance or mixture (charging/discharging) at non-dedicated facilities* | PROC 8a, PROC 26 |
| 8: *Transfer of substance or mixture (charging/discharging) at dedicated facilities* | PROC 8b, PROC 26 |
| 9: *Transfer of substance or mixture into small containers (dedicated filling line, including weighing)* | PROC 9, PROC 26 |
| 10: Roller application or brushing | PROC 10 |
| 11: Indoor use; Non-industrial spraying; Solid in solution | PROC 11 |
| 12: Use as laboratory reagent | PROC 15, PROC 26 |
| 13: Manual activities involving hand contact | PROC 19 |
| 14: Use of functional fluids in small devices | PROC 20 |
| 15: *Equipment cleaning and maintenance at non-dedicated facility* | PROC 8a, PROC 28 |
| 16: *Manual maintenance (cleaning and repair) of machinery at non-dedicated facility* | PROC 28 |

**4.2. Warunki stosowania mające wpływ na narażenie**

**4.2.1. Kontrola narażenia pracowników**

**Warunki użytkowania mające zastosowanie do wszystkich scenariuszy cząstkowych**

|  |
| --- |
| **Warunki i środki w zakresie ochrony osobistej, higieny i oceny stanu zdrowia** |
| *Use suitable eye protection.* |
| **Inne warunki mające wpływ na narażenie pracowników** |
| Indoor use |
| Assumes process temperature up to 20 °C |

​

**Szczególne warunki stosowania odnoszące się do scenariusza szczątkowego**

|  |  |
| --- | --- |
| **Scenariusz cząstkowy** | **Środki szczególne** |
| ***Chemical production in closed process without likelihood of exposure or in containment conditions or processes with equivalent containment conditions* (PROC 1)** | Covers concentrations up to 100 %  Solid, medium dustiness  Covers use up to 8 h/day  *Assumes a good basic standard of occupational hygiene is implemented*  Provide a basic standard of general ventilation (1 to 3 air changes per hour).  Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. |
| ***Chemical production in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions* (PROC 2)** | Covers concentrations up to 100 %  Solid, medium dustiness  Covers use up to 8 h/day  *Assumes a good basic standard of occupational hygiene is implemented*  Provide a basic standard of general ventilation (1 to 3 air changes per hour).  Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. |
| ***Manufacture or formulation in closed batch processes with occasional controlled exposure or processes with equivalent containment condition* (PROC 3)** | Covers concentrations up to 100 %  Solid, medium dustiness  Covers use up to 8 h/day  Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).  Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. |
| **Chemical production where opportunity for exposure arises (PROC 4)** | Covers concentrations up to 100 %  Solid, medium dustiness  Covers use up to 8 h/day  *Assumes a good basic standard of occupational hygiene is implemented*  Local exhaust ventilation; Inhalation - minimum efficiency of 80 %  Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).  Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. |
| **Mixing or blending in batch processes (PROC 5)** | Covers concentrations up to 100 %  Solid, medium dustiness  Covers use up to 8 h/day  *Assumes a good basic standard of occupational hygiene is implemented*  Local exhaust ventilation; Inhalation - minimum efficiency of 80 %  Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).  Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. |
| ***Transfer of substance or mixture (charging/discharging) at non-dedicated facilities* (PROC 8a, PROC 26)** | Covers concentrations up to 100 %  Solid, medium dustiness  Covers use up to 8 h/day  *Assumes a good basic standard of occupational hygiene is implemented*  Local exhaust ventilation; Inhalation - minimum efficiency of 80 %  Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).  Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. |
| ***Transfer of substance or mixture (charging/discharging) at dedicated facilities* (PROC 8b, PROC 26)** | Covers concentrations up to 100 %  Solid, medium dustiness  Covers use up to 8 h/day  *Assumes a good basic standard of occupational hygiene is implemented*  Local exhaust ventilation; Inhalation - minimum efficiency of 80 %  Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).  Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. |
| ***Transfer of substance or mixture into small containers (dedicated filling line, including weighing)* (PROC 9, PROC 26)** | Covers concentrations up to 100 %  Solid, medium dustiness  Covers use up to 8 h/day  *Assumes a good basic standard of occupational hygiene is implemented*  Local exhaust ventilation; Inhalation - minimum efficiency of 80 %  Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).  Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. |
| **Roller application or brushing (PROC 10)** | Covers concentrations up to 100 %  Solid, medium dustiness  Covers use up to 8 h/day  Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.  Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).  Local exhaust ventilation; Inhalation - minimum efficiency of 90 %  Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. |
| **Indoor use; Non-industrial spraying; Solid in solution (PROC 11)** | Covers concentrations up to 35 %  *Physical form of the product is assumed as liquid, this is conservative as it is a solid in a liquid with a very low vapour pressure.*  Covers use up to 2 h/day  Provide a basic standard of general ventilation (1 to 3 air changes per hour).  *Covers exposure in the presence of local exhaust ventilation of minimum 95% efficiency or respiratory protection with minimum 90% efficiency (e.g. APF of10)*  *covers spraying with moderate application rate (0.3-3 L/minute)*  *Covers spraying direction only horizontal or downward*  Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. |
| **Use as laboratory reagent (PROC 15, PROC 26)** | Covers concentrations up to 100 %  Solid, medium dustiness  Covers use up to 8 h/day  *Assumes a good basic standard of occupational hygiene is implemented*  Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).  Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. |
| **Manual activities involving hand contact (PROC 19)** | Covers concentrations up to 100 %  Solid, medium dustiness  Covers use up to 8 h/day  *Assumes a good basic standard of occupational hygiene is implemented*  Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).  Local exhaust ventilation; Inhalation - minimum efficiency of 80 %  Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. |
| **Use of functional fluids in small devices (PROC 20)** | Covers concentrations up to 100 %  Solid, medium dustiness  Covers use up to 8 h/day  *Assumes a good basic standard of occupational hygiene is implemented*  Provide a basic standard of general ventilation (1 to 3 air changes per hour).  Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. |
| ***Equipment cleaning and maintenance at non-dedicated facility* (PROC 8a, PROC 28)** | Covers concentrations up to 100 %  Solid, medium dustiness  Covers use up to 8 h/day  *Assumes a good basic standard of occupational hygiene is implemented*  Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).  *Handle substance within a closed system [ES47] Drain down and flush system prior to equipment break-in or maintenance [E55] Transfer via enclosed lines [E52]*  Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS.  *Respiratory protection (APF of 10) is to be worn in those case where there is potential for peak exposure. Alternatively, good general ventilation with a minimum of 5-10 air changes per air can be applied.* |
| ***Manual maintenance (cleaning and repair) of machinery at non-dedicated facility* (PROC 28)** | Covers concentrations up to 100 %  Solid, medium dustiness  Covers use up to 8 h/day  *Assumes a good basic standard of occupational hygiene is implemented*  Provide a basic standard of general ventilation (1 to 3 air changes per hour).  Local exhaust ventilation; Inhalation - minimum efficiency of %  *Handle substance within a closed system [ES47] Drain down and flush system prior to equipment break-in or maintenance [E55] Transfer via enclosed lines [E52]*  Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. |

**4.3. Oszacowanie narażenia i podanie odnośnika do źródła**

**4.3.1. Narażenie pracowników: *Chemical production in closed process without likelihood of exposure or in containment conditions or processes with equivalent containment conditions* (PROC 1)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.01 mg/m³ (TRA Workers 3.0) | < 0.01 |
| Drogi oddechowe; miejscowe, ostre | 0.04 mg/m³ (TRA Workers 3.0) | < 0.01 |

**4.3.2. Narażenie pracowników: *Chemical production in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions* (PROC 2)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 1 mg/m³ (TRA Workers 3.0) | 0.2 |
| Drogi oddechowe; miejscowe, ostre | 4 mg/m³ (TRA Workers 3.0) | 0.4 |

**4.3.3. Narażenie pracowników: *Manufacture or formulation in closed batch processes with occasional controlled exposure or processes with equivalent containment condition* (PROC 3)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.7 mg/m³ (TRA Workers 3.0) | 0.14 |
| Drogi oddechowe; miejscowe, ostre | 2.8 mg/m³ (TRA Workers 3.0) | 0.28 |

**4.3.4. Narażenie pracowników: Chemical production where opportunity for exposure arises (PROC 4)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.7 mg/m³ (TRA Workers 3.0) | 0.14 |
| Drogi oddechowe; miejscowe, ostre | 2.8 mg/m³ (TRA Workers 3.0) | 0.28 |

**4.3.5. Narażenie pracowników: Mixing or blending in batch processes (PROC 5)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.7 mg/m³ (TRA Workers 3.0) | 0.14 |
| Drogi oddechowe; miejscowe, ostre | 2.8 mg/m³ (TRA Workers 3.0) | 0.28 |

**4.3.6. Narażenie pracowników: *Transfer of substance or mixture (charging/discharging) at non-dedicated facilities* (PROC 8a, PROC 26)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 1.4 mg/m³ (TRA Workers 3.0) | 0.28 |
| Drogi oddechowe; miejscowe, ostre | 5.6 mg/m³ (TRA Workers 3.0) | 0.56 |

**4.3.7. Narażenie pracowników: *Transfer of substance or mixture (charging/discharging) at dedicated facilities* (PROC 8b, PROC 26)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.7 mg/m³ (TRA Workers 3.0) | 0.14 |
| Drogi oddechowe; miejscowe, ostre | 2.8 mg/m³ (TRA Workers 3.0) | 0.28 |

**4.3.8. Narażenie pracowników: *Transfer of substance or mixture into small containers (dedicated filling line, including weighing)* (PROC 9, PROC 26)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.7 mg/m³ (TRA Workers 3.0) | 0.14 |
| Drogi oddechowe; miejscowe, ostre | 2.8 mg/m³ (TRA Workers 3.0) | 0.28 |

**4.3.9. Narażenie pracowników: Roller application or brushing (PROC 10)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.35 mg/m³ (TRA Workers 3.0) | 0.07 |
| Drogi oddechowe; miejscowe, ostre | 1.4 mg/m³ (TRA Workers 3.0) | 0.14 |

**4.3.10. Narażenie pracowników: Indoor use; Non-industrial spraying; Solid in solution (PROC 11)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 1.2 mg/m³ (ART) | 0.24 |
| Drogi oddechowe; miejscowe, ostre | 9.6 mg/m³ (ART) | 0.96 |

**4.3.11. Narażenie pracowników: Use as laboratory reagent (PROC 15, PROC 26)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.35 mg/m³ (TRA Workers 3.0) | 0.07 |
| Drogi oddechowe; miejscowe, ostre | 1.4 mg/m³ (TRA Workers 3.0) | 0.14 |

**4.3.12. Narażenie pracowników: Manual activities involving hand contact (PROC 19)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.7 mg/m³ (TRA Workers 3.0) | 0.14 |
| Drogi oddechowe; miejscowe, ostre | 2.8 mg/m³ (TRA Workers 3.0) | 0.28 |

**4.3.13. Narażenie pracowników: Use of functional fluids in small devices (PROC 20)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 1 mg/m³ (TRA Workers 3.0) | 0.2 |
| Drogi oddechowe; miejscowe, ostre | 4 mg/m³ (TRA Workers 3.0) | 0.4 |

**4.3.14. Narażenie pracowników: *Equipment cleaning and maintenance at non-dedicated facility* (PROC 8a, PROC 28)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.7 mg/m³ (TRA Workers 3.0) | 0.14 |
| Drogi oddechowe; miejscowe, ostre | 2.8 mg/m³ (TRA Workers 3.0) | 0.28 |

**4.3.15. Narażenie pracowników: *Manual maintenance (cleaning and repair) of machinery at non-dedicated facility* (PROC 28)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.7 mg/m³ (ECETOC TRA Workers) | 0.14 |
| Drogi oddechowe; miejscowe, ostre | 2.8 mg/m³ (ECETOC TRA Workers) | 0.28 |

**4.4. Wytyczne dla dalszego użytkownika do celów oceny, czy pracuje w granicach ustanowionych w scenariuszu narażenia**

Narzędzie do czyszczenia powierzchni: For the evaluation of spraying activities the ART (Advanced Reach Tool) modeling tool has been used. In case the DU cannot demonstrate safe use with the conditions currently presented in this SDS Annex, the ART modeling Tool can be used as scaling tool.

**Rozdział 5. ES 5: Powszechne zastosowanie przez pracowników zawodowych; Różne sektory (SU 0, SU 1, SU 5, SU 13, SU 19, SU 20)**

**5.1. Tytuł sekcji**

Nazwa scenariusza narażenia: Professional use; Outdoor use

Sektor zastosowań: Inne (SU 0), Rolnictwo, leśnictwo i rybactwo (SU 1), Produkcja wyrobów włókienniczych, skór, futer (SU 5), Produkcja produktów z pozostałych mineralnych surowców niemetalicznych, np. gipsów, cementu (SU 13), Budownictwo i roboty budowlane (SU 19), Opieka zdrowotna (SU 20)

|  |  |
| --- | --- |
| **Środowisko** |  |
| 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) | ERC 8d |
| **Pracownik** |  |
| 2: *Chemical production in closed process without likelihood of exposure or in containment conditions.* | PROC 1 |
| 3: *Chemical production in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions* | PROC 2 |
| 4: *Manufacture or formulation in closed batch processes with occasional controlled exposure or processes with equivalent containment conditions* | PROC 3 |
| 5: Chemical production where opportunity for exposure arises | PROC 4 |
| 6: Mixing or blending in batch processes | PROC 5 |
| 7: *Transfer of substance or mixture (charging/discharging) at non-dedicated facilities* | PROC 8a, PROC 26 |
| 8: *Transfer of substance or mixture (charging/discharging) at dedicated facilities* | PROC 8b, PROC 26 |
| 9: *Transfer of substance or mixture into small containers (dedicated filling line, including weighing)* | PROC 9, PROC 26 |
| 10: Roller application or brushing | PROC 10 |
| 11: Outdoor use; Non-industrial spraying | PROC 11 |
| 12: Outdoor use; Non-industrial spraying | PROC 11 |
| 13: Use as laboratory reagent | PROC 15, PROC 26 |
| 14: Mixing operations; Manual activities involving hand contact | PROC 19 |
| 15: *Equipment cleaning and maintenance at non-dedicated facility* | PROC 8a |
| 16: Use of functional fluids in small devices | PROC 20 |

**5.2. Warunki stosowania mające wpływ na narażenie**

**5.2.1. Kontrola narażenia pracowników**

**Warunki użytkowania mające zastosowanie do wszystkich scenariuszy cząstkowych**

|  |
| --- |
| **Inne warunki mające wpływ na narażenie pracowników** |
| Outdoor use |
| Assumes process temperature up to 20 °C |

​

**Szczególne warunki stosowania odnoszące się do scenariusza szczątkowego**

|  |  |
| --- | --- |
| **Scenariusz cząstkowy** | **Środki szczególne** |
| ***Chemical production in closed process without likelihood of exposure or in containment conditions.* (PROC 1)** | Covers concentrations up to 100 %  Solid, medium dustiness  Covers use up to 8 h/day  *Assumes a good basic standard of occupational hygiene is implemented*  Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS.  *Use suitable eye protection* |
| ***Chemical production in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions* (PROC 2)** | Covers concentrations up to 100 %  Solid, medium dustiness  Covers use up to 8 h/day  *Assumes a good basic standard of occupational hygiene is implemented*  Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS.  *Use suitable eye protection* |
| ***Manufacture or formulation in closed batch processes with occasional controlled exposure or processes with equivalent containment conditions* (PROC 3)** | Covers concentrations up to 100 %  Solid, medium dustiness  Covers use up to 8 h/day  *Assumes a good basic standard of occupational hygiene is implemented*  Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS.  *Use suitable eye protection* |
| **Chemical production where opportunity for exposure arises (PROC 4)** | Covers concentrations up to 100 %  Solid, medium dustiness  Covers use up to 8 h/day  *Assumes a good basic standard of occupational hygiene is implemented*  Wear suitable respiratory protection.; Inhalation - minimum efficiency of 90 %; For further specification, refer to section 8 of the SDS.  Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS.  *Use suitable eye protection* |
| **Mixing or blending in batch processes (PROC 5)** | Covers concentrations up to 100 %  Solid, medium dustiness  Covers use up to 8 h/day  *Assumes a good basic standard of occupational hygiene is implemented*  Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS.  Wear suitable respiratory protection.; Inhalation - minimum efficiency of 90 %; For further specification, refer to section 8 of the SDS.  *Use suitable eye protection* |
| ***Transfer of substance or mixture (charging/discharging) at non-dedicated facilities* (PROC 8a, PROC 26)** | Covers concentrations up to 100 %  Solid, medium dustiness  Covers use up to 8 h/day  *Assumes a good basic standard of occupational hygiene is implemented*  Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS.  *Use suitable eye protection*  Wear suitable respiratory protection.; Inhalation - minimum efficiency of 90 %; For further specification, refer to section 8 of the SDS. |
| ***Transfer of substance or mixture (charging/discharging) at dedicated facilities* (PROC 8b, PROC 26)** | Covers concentrations up to 100 %  Solid, medium dustiness  Covers use up to 8 h/day  *Assumes a good basic standard of occupational hygiene is implemented*  Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS.  *Use suitable eye protection*  Wear suitable respiratory protection.; Inhalation - minimum efficiency of 90 %; For further specification, refer to section 8 of the SDS. |
| ***Transfer of substance or mixture into small containers (dedicated filling line, including weighing)* (PROC 9, PROC 26)** | Covers concentrations up to 100 %  Solid, medium dustiness  Covers use up to 8 h/day  *Assumes a good basic standard of occupational hygiene is implemented*  *Use suitable eye protection*  Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS.  Wear suitable respiratory protection.; Inhalation - minimum efficiency of 90 %; For further specification, refer to section 8 of the SDS. |
| **Roller application or brushing (PROC 10)** | Covers concentrations up to 100 %  Solid, medium dustiness  Covers use up to 8 h/day  *Assumes a good basic standard of occupational hygiene is implemented*  Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS.  *Use suitable eye protection*  Wear suitable respiratory protection.; Inhalation - minimum efficiency of 90 %; For further specification, refer to section 8 of the SDS. |
| **Outdoor use; Non-industrial spraying (PROC 11)** | Covers concentrations up to 35 %  *Physical form of the product is assumed as liquid, this is conservative as it is a solid in a liquid with a very low vapour pressure.*  Covers use up to 2 h/day  *Covers activity where the primary emission source is located out the breathing zone of the worker (i.e. the volume of air is more than 1 metre in any direction of the worker’s head)*  Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.  *Covers spraying direction only horizontal or downward*  *covers spraying with high compressed air*  *covers high spraying application rate (> 3 L/minute)*  *Use suitable eye protection.*  Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS.  *covers partial personal enclosure (e.g. truck cabin)* |
| **Outdoor use; Non-industrial spraying (PROC 11)** | Covers concentrations up to 35 %  *Physical form of the product is assumed as liquid, this is conservative as it is a solid in a liquid with a very low vapour pressure.*  Covers use up to 0.25 h/day  *Covers activity where the primary emission source is located in the breathing zone of the worker (i.e. the volume of air within 1 metre in any direction of the worker’s head)*  Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.  *covers any spraying direction*  *covers spraying with high compressed air*  *covers high spraying application rate (> 3 L/minute)*  *Use suitable eye protection.*  *Covers spraying activity wearing respiratory protection with minimum efficiency of 95% (i.e. APF of 20)*  Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. |
| **Use as laboratory reagent (PROC 15, PROC 26)** | Covers concentrations up to 100 %  Solid, medium dustiness  Covers use up to 8 h/day  *Assumes a good basic standard of occupational hygiene is implemented*  Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS.  *Use suitable eye protection* |
| **Mixing operations; Manual activities involving hand contact (PROC 19)** | Covers concentrations up to 100 %  Solid, medium dustiness  Covers use up to 8 h/day  *Assumes a good basic standard of occupational hygiene is implemented*  Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS.  *Use suitable eye protection*  Wear suitable respiratory protection.; Inhalation - minimum efficiency of 90 %; For further specification, refer to section 8 of the SDS. |
| ***Equipment cleaning and maintenance at non-dedicated facility* (PROC 8a)** | Covers concentrations up to 100 %  Solid, medium dustiness  Covers use up to 8 h/day  *Assumes a good basic standard of occupational hygiene is implemented*  *Handle substance within a closed system [ES47] Drain down and flush system prior to equipment break-in or maintenance [E55] Transfer via enclosed lines [E52]*  Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS.  *Use suitable eye protection*  Wear suitable respiratory protection.; Inhalation - minimum efficiency of 90 %; For further specification, refer to section 8 of the SDS. |
| **Use of functional fluids in small devices (PROC 20)** | Covers concentrations up to 100 %  Solid, medium dustiness  Covers use up to 8 h/day  *Assumes a good basic standard of occupational hygiene is implemented*  Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS.  *Use suitable eye protection* |

**5.3. Oszacowanie narażenia i podanie odnośnika do źródła**

**5.3.1. Narażenie pracowników: *Chemical production in closed process without likelihood of exposure or in containment conditions.* (PROC 1)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 7E-3 mg/m³ (TRA Workers 3.0) | < 0.01 |
| Drogi oddechowe; miejscowe, ostre | 0.028 mg/m³ (TRA Workers 3.0) | < 0.01 |

**5.3.2. Narażenie pracowników: *Chemical production in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions* (PROC 2)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.7 mg/m³ (TRA Workers 3.0) | 0.14 |
| Drogi oddechowe; miejscowe, ostre | 2.8 mg/m³ (TRA Workers 3.0) | 0.28 |

**5.3.3. Narażenie pracowników: *Manufacture or formulation in closed batch processes with occasional controlled exposure or processes with equivalent containment conditions* (PROC 3)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.7 mg/m³ (TRA Workers 3.0) | 0.14 |
| Drogi oddechowe; miejscowe, ostre | 2.8 mg/m³ (TRA Workers 3.0) | 0.28 |

**5.3.4. Narażenie pracowników: Chemical production where opportunity for exposure arises (PROC 4)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.35 mg/m³ (TRA Workers 3.0) | 0.07 |
| Drogi oddechowe; miejscowe, ostre | 1.4 mg/m³ (TRA Workers 3.0) | 0.14 |

**5.3.5. Narażenie pracowników: Mixing or blending in batch processes (PROC 5)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.35 mg/m³ (TRA Workers 3.0) | 0.07 |
| Drogi oddechowe; miejscowe, ostre | 1.4 mg/m³ (TRA Workers 3.0) | 0.14 |

**5.3.6. Narażenie pracowników: *Transfer of substance or mixture (charging/discharging) at non-dedicated facilities* (PROC 8a, PROC 26)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.7 mg/m³ (TRA Workers 3.0) | 0.14 |
| Drogi oddechowe; miejscowe, ostre | 2.8 mg/m³ (TRA Workers 3.0) | 0.28 |

**5.3.7. Narażenie pracowników: *Transfer of substance or mixture (charging/discharging) at dedicated facilities* (PROC 8b, PROC 26)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.35 mg/m³ (TRA Workers 3.0) | 0.07 |
| Drogi oddechowe; miejscowe, ostre | 1.4 mg/m³ (TRA Workers 3.0) | 0.14 |

**5.3.8. Narażenie pracowników: *Transfer of substance or mixture into small containers (dedicated filling line, including weighing)* (PROC 9, PROC 26)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.35 mg/m³ (TRA Workers 3.0) | 0.07 |
| Drogi oddechowe; miejscowe, ostre | 1.4 mg/m³ (TRA Workers 3.0) | 0.14 |

**5.3.9. Narażenie pracowników: Roller application or brushing (PROC 10)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.35 mg/m³ (TRA Workers 3.0) | 0.07 |
| Drogi oddechowe; miejscowe, ostre | 1.4 mg/m³ (TRA Workers 3.0) | 0.14 |

**5.3.10. Narażenie pracowników: Outdoor use; Non-industrial spraying (PROC 11)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 1.2 mg/m³ (ART) | 0.24 |
| Drogi oddechowe; miejscowe, ostre | 9.6 mg/m³ (ART) | 0.96 |

**5.3.11. Narażenie pracowników: Outdoor use; Non-industrial spraying (PROC 11)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 1.2 mg/m³ (ART) | 0.24 |
| Drogi oddechowe; miejscowe, ostre | 9.6 mg/m³ (ART) | 0.96 |

**5.3.12. Narażenie pracowników: Use as laboratory reagent (PROC 15, PROC 26)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.35 mg/m³ (TRA Workers 3.0) | 0.07 |
| Drogi oddechowe; miejscowe, ostre | 1.4 mg/m³ (TRA Workers 3.0) | 0.14 |

**5.3.13. Narażenie pracowników: Mixing operations; Manual activities involving hand contact (PROC 19)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.35 mg/m³ (TRA Workers 3.0) | 0.07 |
| Drogi oddechowe; miejscowe, ostre | 1.4 mg/m³ (TRA Workers 3.0) | 0.14 |

**5.3.14. Narażenie pracowników: *Equipment cleaning and maintenance at non-dedicated facility* (PROC 8a)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.7 mg/m³ (TRA Workers 3.0) | 0.14 |
| Drogi oddechowe; miejscowe, ostre | 2.8 mg/m³ (TRA Workers 3.0) | 0.28 |

**5.3.15. Narażenie pracowników: Use of functional fluids in small devices (PROC 20)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.7 mg/m³ (TRA Workers 3.0) | 0.14 |
| Drogi oddechowe; miejscowe, ostre | 2.8 mg/m³ (TRA Workers 3.0) | 0.28 |

**5.4. Wytyczne dla dalszego użytkownika do celów oceny, czy pracuje w granicach ustanowionych w scenariuszu narażenia**

Wytyczne: Application of de-icing agent (mixture of 70% NaCl and 30% of a 20% solution of CaCl2) assumes a fraction of 0.06 of CaCl2 in road salt with an annual tonnage of 0.09 tonnes/km for 25 emission days per year. Application of de-icing agent (liquid CaCl2 brine (max. 35% solution)) assumes a fraction of 0.35 of CaCl2 in road salt with an annual tonnage of 0.28 tonnes/km for 25 emission days per year. Application of Dust suppressor (solid CaCl2 (up to 80%)) assumes a fraction of 0.8 of CaCl2 in road salt with an annual tonnage of 2.4 tonnes/km for 3 emission days per year. Application of Dust suppressor (solid CaCl2 (up to 37%)) assumes a fraction of 0.37 of CaCl2 in road salt with an annual tonnage of 1.11 tonnes/km for 3 emission days per year.

**Rozdział 6. ES 6: Stosowanie przez konsumentów; Różne produkty (PC 0, PC 2, PC 4, PC 12, PC 16, PC 27, PC 35, PC 37)**

**6.1. Tytuł sekcji**

Nazwa scenariusza narażenia: Consumer use; Indoor or outdoor use

Kategoria produktu: Inne (PC 0), Adsorbenty (PC 2), Produkty przeciw zamarzaniu i odmrażające (PC 4), Nawozy (PC 12), Płyny termoprzewodzące (PC 16), Środki ochrony roślin (PC 27), Środki myjące i czyszczące (PC 35), Chemikalia do uzdatniania wody (PC 37)

|  |  |
| --- | --- |
| **Środowisko** |  |
| 1: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) | ERC 8a |
| 2: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) | ERC 8d |
| **Konsument** |  |
| 3: Dust suppressant; No spraying | PC 0 |
| 4: Dust suppressant; Spraying | PC 0 |
| 5: *Humidity adsorbants* | PC 0 |
| 6: *Cement/concrete/mortar* | PC 0 |
| 7: Adsorbents | PC 2 |
| 8: Anti-freeze and de-icing products; No spraying | PC 4 |
| 9: Anti-freeze and de-icing products; Spraying | PC 4 |
| 10: Fertilizers; No spraying | PC 12 |
| 11: Fertilizers; Spraying | PC 12 |
| 12: Heat transfer fluids | PC 16 |
| 13: Plant protection products; No spraying | PC 27 |
| 14: Plant protection products; Spraying | PC 27 |
| 15: Water treatment chemicals | PC 37 |
| 16: Washing and cleaning products; No spraying | PC 35 |
| 17: Washing and cleaning products; Spraying | PC 35 |

**6.2. Warunki stosowania mające wpływ na narażenie**

**6.2.1. Kontrola narażenia konsumentów: Dust suppressant; No spraying (PC 0)**

|  |
| --- |
| **Charakterystyka produktu (wyrobu)** |
| Covers concentrations up to 100 % |
| *Solid, medium dustiness. Covers also liquid form* |
| **Ilość stosowana (lub zawarta w wyrobach), częstotliwość i czas trwania stosowania/narażenia** |
| Covers use up to 1 events per day |
| *Covers use up to 24 h* |
| **Informacje i porady dotyczące zachowań dla konsumentów** |
| *Requires room with good ventilation* |
| *Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.* |
| **Inne warunki mające wpływ na narażenie konsumentów** |
| Release area <= 125 m2 |

**6.2.2. Kontrola narażenia konsumentów: Dust suppressant; Spraying (PC 0)**

|  |
| --- |
| **Charakterystyka produktu (wyrobu)** |
| Covers concentrations up to 45 % |
| *Physical form of the product is assumed as liquid, this is conservative as it is a solid in a liquid with a very low vapour pressure.* |
| *Covers spraying activity* |
| **Ilość stosowana (lub zawarta w wyrobach), częstotliwość i czas trwania stosowania/narażenia** |
| Covers use up to 1 events per day |
| *Covers 10 minutes spraying application* |
| **Informacje i porady dotyczące zachowań dla konsumentów** |
| *Requires room with good ventilation* |
| *Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.* |

**6.2.3. Kontrola narażenia konsumentów: *Humidity adsorbants* (PC 0)**

|  |
| --- |
| **Charakterystyka produktu (wyrobu)** |
| Covers concentrations up to 100 % |
| *Solid, medium dustiness. Covers also liquid form* |
| **Ilość stosowana (lub zawarta w wyrobach), częstotliwość i czas trwania stosowania/narażenia** |
| Covers use up to 1 events per day |
| *Covers use up to 24 h* |
| **Informacje i porady dotyczące zachowań dla konsumentów** |
| *Requires room with good ventilation* |
| *Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.* |
| **Inne warunki mające wpływ na narażenie konsumentów** |
| Release area <= 125 m2 |

**6.2.4. Kontrola narażenia konsumentów: *Cement/concrete/mortar* (PC 0)**

|  |
| --- |
| **Charakterystyka produktu (wyrobu)** |
| Covers concentrations up to 100 % |
| *Solid, medium dustiness. Covers also liquid form* |
| **Ilość stosowana (lub zawarta w wyrobach), częstotliwość i czas trwania stosowania/narażenia** |
| Covers use up to 1 events per day |
| *Covers use up to 24 h* |
| **Informacje i porady dotyczące zachowań dla konsumentów** |
| *Requires room with good ventilation* |
| *Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.* |
| **Inne warunki mające wpływ na narażenie konsumentów** |
| Release area <= 125 m2 |

**6.2.5. Kontrola narażenia konsumentów: Adsorbents (PC 2)**

|  |
| --- |
| **Charakterystyka produktu (wyrobu)** |
| Covers concentrations up to 100 % |
| *Solid, medium dustiness. Covers also liquid form* |
| **Ilość stosowana (lub zawarta w wyrobach), częstotliwość i czas trwania stosowania/narażenia** |
| Covers use up to 1 events per day |
| *Covers use up to 24 h* |
| **Informacje i porady dotyczące zachowań dla konsumentów** |
| *Requires room with good ventilation* |
| *Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.* |
| **Inne warunki mające wpływ na narażenie konsumentów** |
| Release area <= 125 m2 |

**6.2.6. Kontrola narażenia konsumentów: Anti-freeze and de-icing products; No spraying (PC 4)**

|  |
| --- |
| **Charakterystyka produktu (wyrobu)** |
| Covers concentrations up to 100 % |
| *Solid, medium dustiness. Covers also liquid form* |
| **Ilość stosowana (lub zawarta w wyrobach), częstotliwość i czas trwania stosowania/narażenia** |
| For each use event, covers use amounts up to 5E4 g/event |
| Covers use up to 1 events per day |
| *Covers use up to 24 h* |
| **Informacje i porady dotyczące zachowań dla konsumentów** |
| *Requires room with good ventilation* |
| *Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.* |
| **Inne warunki mające wpływ na narażenie konsumentów** |
| Release area <= 125 m2 |

**6.2.7. Kontrola narażenia konsumentów: Anti-freeze and de-icing products; Spraying (PC 4)**

|  |
| --- |
| **Charakterystyka produktu (wyrobu)** |
| Covers concentrations up to 45 % |
| *Physical form of the product is assumed as liquid, this is conservative as it is a solid in a liquid with a very low vapour pressure.* |
| *Covers spraying activity* |
| **Ilość stosowana (lub zawarta w wyrobach), częstotliwość i czas trwania stosowania/narażenia** |
| Covers use up to 1 events per day |
| *Covers 10 minutes spraying application* |
| **Informacje i porady dotyczące zachowań dla konsumentów** |
| *Requires room with good ventilation* |
| *Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.* |

**6.2.8. Kontrola narażenia konsumentów: Fertilizers; No spraying (PC 12)**

|  |
| --- |
| **Charakterystyka produktu (wyrobu)** |
| Covers concentrations up to 100 % |
| *Solid, medium dustiness. Covers also liquid form* |
| **Ilość stosowana (lub zawarta w wyrobach), częstotliwość i czas trwania stosowania/narażenia** |
| Covers use up to 1 events per day |
| *Covers use up to 24 h* |
| **Informacje i porady dotyczące zachowań dla konsumentów** |
| *Requires room with good ventilation* |
| *Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.* |
| **Inne warunki mające wpływ na narażenie konsumentów** |
| Release area <= 125 m2 |

**6.2.9. Kontrola narażenia konsumentów: Fertilizers; Spraying (PC 12)**

|  |
| --- |
| **Charakterystyka produktu (wyrobu)** |
| Covers concentrations up to 45 % |
| *Physical form of the product is assumed as liquid, this is conservative as it is a solid in a liquid with a very low vapour pressure.* |
| *Covers spraying activity* |
| **Ilość stosowana (lub zawarta w wyrobach), częstotliwość i czas trwania stosowania/narażenia** |
| Covers use up to 1 events per day |
| *Covers 10 minutes spraying application* |
| **Informacje i porady dotyczące zachowań dla konsumentów** |
| *Requires room with good ventilation* |
| *Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.* |

**6.2.10. Kontrola narażenia konsumentów: Heat transfer fluids (PC 16)**

|  |
| --- |
| **Charakterystyka produktu (wyrobu)** |
| Covers concentrations up to 100 % |
| *Solid, medium dustiness. Covers also liquid form* |
| **Ilość stosowana (lub zawarta w wyrobach), częstotliwość i czas trwania stosowania/narażenia** |
| Covers use up to 1 events per day |
| *Covers use up to 24 h* |
| **Informacje i porady dotyczące zachowań dla konsumentów** |
| *Requires room with good ventilation* |
| *Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.* |
| **Inne warunki mające wpływ na narażenie konsumentów** |
| Release area <= 125 m2 |

**6.2.11. Kontrola narażenia konsumentów: Plant protection products; No spraying (PC 27)**

|  |
| --- |
| **Charakterystyka produktu (wyrobu)** |
| Covers concentrations up to 100 % |
| *Solid, medium dustiness. Covers also liquid form* |
| **Ilość stosowana (lub zawarta w wyrobach), częstotliwość i czas trwania stosowania/narażenia** |
| Covers use up to 1 events per day |
| *Covers use up to 24 h* |
| **Informacje i porady dotyczące zachowań dla konsumentów** |
| *Requires room with good ventilation* |
| *Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.* |
| **Inne warunki mające wpływ na narażenie konsumentów** |
| Release area <= 125 m2 |

**6.2.12. Kontrola narażenia konsumentów: Plant protection products; Spraying (PC 27)**

|  |
| --- |
| **Charakterystyka produktu (wyrobu)** |
| Covers concentrations up to 45 % |
| *Physical form of the product is assumed as liquid, this is conservative as it is a solid in a liquid with a very low vapour pressure.* |
| *Covers spraying activity* |
| **Ilość stosowana (lub zawarta w wyrobach), częstotliwość i czas trwania stosowania/narażenia** |
| Covers use up to 1 events per day |
| *Covers 10 minutes spraying application* |
| **Informacje i porady dotyczące zachowań dla konsumentów** |
| *Requires room with good ventilation* |
| *Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.* |

**6.2.13. Kontrola narażenia konsumentów: Water treatment chemicals (PC 37)**

|  |
| --- |
| **Charakterystyka produktu (wyrobu)** |
| Covers concentrations up to 100 % |
| *Solid, medium dustiness. Covers also liquid form* |
| *Covers exposure via inhalation route* |
| **Ilość stosowana (lub zawarta w wyrobach), częstotliwość i czas trwania stosowania/narażenia** |
| Covers use up to 1 events per day |
| *Covers use up to 24 h* |
| **Informacje i porady dotyczące zachowań dla konsumentów** |
| *Requires room with good ventilation* |
| *Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.* |
| **Inne warunki mające wpływ na narażenie konsumentów** |
| Release area <= 125 m2 |

**6.2.14. Kontrola narażenia konsumentów: Washing and cleaning products; No spraying (PC 35)**

|  |
| --- |
| **Charakterystyka produktu (wyrobu)** |
| Covers concentrations up to 100 % |
| *Solid, medium dustiness. Covers also liquid form* |
| **Ilość stosowana (lub zawarta w wyrobach), częstotliwość i czas trwania stosowania/narażenia** |
| Covers use up to 1 events per day |
| *Covers use up to 24 h* |
| **Informacje i porady dotyczące zachowań dla konsumentów** |
| *Requires room with good ventilation* |
| *Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.* |
| **Inne warunki mające wpływ na narażenie konsumentów** |
| Release area <= 125 m2 |

**6.2.15. Kontrola narażenia konsumentów: Washing and cleaning products; Spraying (PC 35)**

|  |
| --- |
| **Charakterystyka produktu (wyrobu)** |
| Covers concentrations up to 45 % |
| *Physical form of the product is assumed as liquid, this is conservative as it is a solid in a liquid with a very low vapour pressure.* |
| *Covers spraying activity* |
| **Ilość stosowana (lub zawarta w wyrobach), częstotliwość i czas trwania stosowania/narażenia** |
| Covers use up to 1 events per day |
| *Covers 10 minutes spraying application* |
| **Informacje i porady dotyczące zachowań dla konsumentów** |
| *Requires room with good ventilation* |
| *Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.* |

**6.3. Oszacowanie narażenia i podanie odnośnika do źródła**

**6.3.1. Narażenie konsumentów: Dust suppressant; No spraying (PC 0)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 5E-3 mg/m³ (ConsExpo) | < 0.01 |
| Drogi oddechowe; miejscowe, ostre | 0.01 mg/m³ (ConsExpo) | < 0.01 |

**6.3.2. Narażenie konsumentów: Dust suppressant; Spraying (PC 0)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.687 mg/m³ (ConsExpo) | 0.275 |
| Drogi oddechowe; miejscowe, ostre | 0.69 mg/m³ (ConsExpo) | 0.138 |

**6.3.3. Narażenie konsumentów: *Humidity adsorbants* (PC 0)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 5E-3 mg/m³ (ConsExpo) | < 0.01 |
| Drogi oddechowe; miejscowe, ostre | 0.01 mg/m³ (ConsExpo) | < 0.01 |

**6.3.4. Narażenie konsumentów: *Cement/concrete/mortar* (PC 0)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 5E-3 mg/m³ (ConsExpo) | < 0.01 |
| Drogi oddechowe; miejscowe, ostre | 0.01 mg/m³ (ConsExpo) | < 0.01 |

**6.3.5. Narażenie konsumentów: Adsorbents (PC 2)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 5E-3 mg/m³ (ConsExpo) | < 0.01 |
| Drogi oddechowe; miejscowe, ostre | 0.01 mg/m³ (ConsExpo) | < 0.01 |

**6.3.6. Narażenie konsumentów: Anti-freeze and de-icing products; No spraying (PC 4)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 5E-3 mg/m³ (ConsExpo) | < 0.01 |
| Drogi oddechowe; miejscowe, ostre | 0.01 mg/m³ (ConsExpo) | < 0.01 |

**6.3.7. Narażenie konsumentów: Anti-freeze and de-icing products; Spraying (PC 4)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.687 mg/m³ (ConsExpo) | 0.275 |
| Drogi oddechowe; miejscowe, ostre | 0.69 mg/m³ (ConsExpo) | 0.138 |

**6.3.8. Narażenie konsumentów: Fertilizers; No spraying (PC 12)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 5E-3 mg/m³ (ConsExpo) | < 0.01 |
| Drogi oddechowe; miejscowe, ostre | 0.01 mg/m³ (ConsExpo) | < 0.01 |

**6.3.9. Narażenie konsumentów: Fertilizers; Spraying (PC 12)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.687 mg/m³ (ConsExpo) | 0.275 |
| Drogi oddechowe; miejscowe, ostre | 0.69 mg/m³ (ConsExpo) | 0.138 |

**6.3.10. Narażenie konsumentów: Heat transfer fluids (PC 16)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 5E-3 mg/m³ (ConsExpo) | < 0.01 |
| Drogi oddechowe; miejscowe, ostre | 0.01 mg/m³ (ConsExpo) | < 0.01 |

**6.3.11. Narażenie konsumentów: Plant protection products; No spraying (PC 27)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 5E-3 mg/m³ (ConsExpo) | < 0.01 |
| Drogi oddechowe; miejscowe, ostre | 0.01 mg/m³ (ConsExpo) | < 0.01 |

**6.3.12. Narażenie konsumentów: Plant protection products; Spraying (PC 27)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.687 mg/m³ (ConsExpo) | 0.275 |
| Drogi oddechowe; miejscowe, ostre | 0.69 mg/m³ (ConsExpo) | 0.138 |

**6.3.13. Narażenie konsumentów: Water treatment chemicals (PC 37)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 5E-3 mg/m³ (ConsExpo) | < 0.01 |
| Drogi oddechowe; miejscowe, ostre | 0.01 mg/m³ (ConsExpo) | < 0.01 |

**6.3.14. Narażenie konsumentów: Washing and cleaning products; No spraying (PC 35)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 5E-3 mg/m³ (ConsExpo) | < 0.01 |
| Drogi oddechowe; miejscowe, ostre | 0.01 mg/m³ (ConsExpo) | < 0.01 |

**6.3.15. Narażenie konsumentów: Washing and cleaning products; Spraying (PC 35)**

| **Droga narażenia i rodzaje skutków** | **Oszacowanie poziomu narażenia** | **RCR** |
| --- | --- | --- |
| Drogi oddechowe; miejscowe, przewlekłe | 0.687 mg/m³ (ConsExpo) | 0.275 |
| Drogi oddechowe; miejscowe, ostre | 0.69 mg/m³ (ConsExpo) | 0.138 |

**6.4. Wytyczne dla dalszego użytkownika do celów oceny, czy pracuje w granicach ustanowionych w scenariuszu narażenia**