# Grenz- und Richtwerte von Schadstoffen

| | | Aushub-, Abraum- und Abbruchmaterial | | | | | | | | Humus/Boden nach VBBo | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Typ A | Typ SV (ehem. T) | Typ B | Typ C | Typ D | Typ E | Zementwerk Rohmaterial | JURA Cem mit RTO | Richtwert | Prüfwert Pflanzenbau | Prüfwert direkte Bodenaufnahme | Sanierungswert Familiengärten | Sanierungswert Landwirtschaft |
| **VVEA** | | **A3Z1** | **A3Z2** | **A5Z2** | **A5Z3** | **A5Z4** | **A5Z5** | **A4Z1** | | | | | | |
| **Allgemeine Parameter (mg/kg)** | | | | | | | | | | | | | | |
| Glühverlust (in Gew.-%) | GV | 1 | 5 | 5 | | | | | | | | | | |
| Organischer Kohlenstoff | Corg | | 10'000 | 20'000 | 20'000 | 20'000 | 50'000 | 50'000 | 300'000 | | | | | |
| Lösliche Salze | LS | | | 5'000 | 30'000 | | 50'000 | | | | | | | |
| **Anorganika (mg/kg)** | | | | | | | | | | | | | | |
| Antimon | Sb | 3 | 15 | 30 | | 50 | 50 | 30 | 30 | | | | | |
| Arsen | As | 15 | 15 | 30 | 0.10 | 50 | 50 | 30 | 30 | | | | | |
| Barium | Ba | | | | | | | | | | | | | |
| Beryllium | Be | | | | | | | | | | | | | |
| Blei | Pb | 50 | 250 | 500 | | 2'000 | 2'000 | 500 | 500 | 50 | 200 | 300 | 1'000 | 2'000 |
| Cadmium | Cd | 1 | 5 | 10 | | 10 | 10 | 5 | 5 | 0.8 | 2 | 10 | 20 | 30 |
| Chrom gesamt | Cr | 50 | 250 | 500 | | 1'000 | 1'000 | 500 | 500 | 50 | | | | |
| Chrom-VI (Eluierbarkeit) | Cr-VI | 0.05 | 0.05 | 0.1 | | 0.5 | 0.5 | | | | | | | |
| Cyanid gesamt | CN | 0.5 | | | | | | | | | | | | |
| Fluor | F | | | | | | | | | 700 | | | | |
| Kobalt | Co | | | | | | | 250 | 250 | | | | | |
| Kupfer | Cu | 40 | 250 | 500 | | 5'000 | 5'000 | 500 | 500 | 40 | 150 | | 1'000 | 1'000 |
| Molybdän | Mo | | | | | | | | | 5 | | | | |
| Nickel | Ni | 50 | 250 | 500 | | 1'000 | 1'000 | 500 | 500 | 50 | | | | |
| Quecksilber | Hg | 0.5 | 1 | 2 | 5 | 5 | 5 | 1 | 1 | 0.5 | | | | |
| Thallium | Tl | | | | | | | 3 | 3 | | | | | |
| Zink | Zn | 150 | 500 | 1'000 | | 5'000 | 5'000 | 2'000 | 2'000 | 150 | | | 2'000 | 2'000 |
| Zinn | Sn | | | | | | | 100 | 100 | | | | | |
| **Organika (mg/kg)** | | | | | | | | | | | | | | |
| Chlorierte Lösungsmittel | CLM | 0.1 | 0.5 | 1 | 1 | 1 | 5 | 10 | 10 | | | | | |
| Polychlorierte Biphenyle | PCB | 0.1 | 0.5 | 1 | 1 | 1 | 10 | 10 | 10 | | 0.2 | 0.1 | 1 | 3 |
| Kohlenwasserstoffe flüchtig | C5-C10 | 1 | 5 | 10 | 10 | 10 | 100 | 100 | 1'000 | | | | | |
| Kohlenwasserstoff-Index | C10 -C40 | 50 | 250 | 500 | 500 | 500 | 5'000 | 5'000 | 50'000 | | | | | |
| Monocyclische aromat. KW | BTEX | 1 | 5 | 10 | 10 | 10 | 100 | 10 | 100 | | | | | |
| Benzol | Ben | 0.1 | 0.5 | 1 | 1 | 1 | 1 | 1 | 10 | | | | | |
| Polycyclische aromat. KW | PAK | 3 | 12.5 | 25 | 25 | 25 | 250 | 250 | 2'500 | 1 | 20 | 10 | 100 | |
| Benzo(a)pyren | BaP | 0.3 | 1.5 | 3 | 3 | 3 | 10 | 3 | 200 | 0.2 | 2 | 1 | 10 | |
| Dioxine & Furane | PCDD/F | | | | 1'000 | 1'000 | | | | 5 | 20 | 20 | 100 | 1 000 |
| **VVEA Eluattest 1 für Schwermetalle (mg/L)** | | | | | | | | | | | | | | |
| Aluminium | Al | | | | 10 | | | | | | | | | |
| Arsen | As | | | | 0.1 | | | | | | | | | |
| Barium | Ba | | | | 5 | | | | | | | | | |
| Blei | Pb | | | | 1 | | | | | | | | | |
| Cadmium | Cd | | | | 0.1 | | | | | | | | | |
| Chrom-III | Cr-III | | | | 2 | | | | | | | | | |
| Kobalt | Co | | | | 0.5 | | | | | | | | | |
| Kupfer | Cu | | | | 0.50 | | | | | | | | | |
| Nickel | Ni | | | | 2 | | | | | | | | | |
| Quecksilber | Hg | | | | 0.01 | | | | | | | | | |
| Zink | Zn | | | | 10 | | | | | | | | | |
| Zinn | Sn | | | | 2 | | | | | | | | | |
| **VVEA Eluattest 2 für Anorganika und Organika (mg/L)** | | | | | | | | | | | | | | |
| Leitfähigkeit | pH | | | | 6-12 | | | | | | | | | |
| Organischer Kohlenstoff | DOC | | | | 20 | | | | | | | | | |
| Fluorid | $F^-$ | | | | 10 | | | | | | | | | |
| Ammonium | $NH^{4+}$ | | | | 5 | | | | | | | | | |
| Nitrit | $NO^{2-}$ | | | | 1 | | | | | | | | | |
| Phosphat | $PO_4^{3-}$ | | | | 10 | | | | | | | | | |
| Cyanid (frei) | CN | | | | 0.10 | | | | | | | | | |
| Sulfid | $H_2S$ | | | | 0.10 | | | | | | | | | |
| Sulfit | $H_2SO_3$ | | | | 1 | | | | | | | | | |

T +41 62 887 76 66
verwertung@juramaterials.ch
www.juramaterials.ch