# Abrasive Products AB-Z, AC-D, AF-D, AG-D, AN-D, A24 R

## Safety Data Sheet

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## SECTION 1: Identification

### 1.1. Identification

| | |
|---|---|
| Product form | Article |
| Trade name | Abrasive Products AB-Z, AC-D, AF-D, AG-D, AN-D, A24 R |
| Product code | BU ET&A |

### 1.2. Recommended use and restrictions on use

| | |
|---|---|
| Use of the substance/mixture | Milling, grinding and similar activities |
| Restrictions on use | For professional use only |

### 1.3. Supplier

**Supplier**

Hilti, Inc.
Legacy Tower, Suite 1000
7250 Dallas Parkway
US TX 75024 Plano
USA
T +1 9724035800
1-800-879-8000 toll free, F +1 918 254 0522
us-sales@hilti.com

**Department issuing data specification sheet**

Hilti AG
Feldkircherstraße 100
FL 9494 Schaan
Liechtenstein
T +423 234 2111
product.compliance-power.tools@hilti.com

### 1.4. Emergency telephone number

| | |
|---|---|
| Emergency number | Emergency CONTACT (24-Hour-Number)<br>GBK/Infotrac ID 101022<br>(USA domestic) 1 800 535 5053<br>or international (001) 352 323 3500 |

## SECTION 2: Hazard(s) identification

### 2.1. Classification of the substance or mixture

**GHS-US classification**

Not classified

### 2.2. GHS Label elements, including precautionary statements

### 2.3. Other hazards which do not result in classification

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

| Name | Common Name (Synonyms) | Product identifier | % | GHS-US classification |
|---|---|---|---|---|
| Aluminium oxide | | CAS-No.: 1344-28-1 | < 100 | Not classified |
| zirconium dioxide | zirconium dioxide / zirconium oxide ($ZrO_2$) | CAS-No.: 1314-23-4 | < 80 | Not classified |
| silicon carbide | silicon carbide (SiC) / silicon monocarbide | CAS-No.: 409-21-2 | < 80 | Carc. 1B, H350 |
| Iron sulfide ($FeS_2$) | | CAS-No.: 12068-85-8 | 0 - 30 | Resp. Sens. 1, H334<br>Skin Sens. 1, H317 |
| phenol/formaldehyde, resins | phenol condensation products / phenol, polymer with formaldehyde / phenolic resin | CAS-No.: 9003-35-4 | 0 - 30 | Skin Irrit. 2, H315<br>Eye Irrit. 2, H319 |
| trisodium hexafluoroaluminate | aluminate(3-), hexafluoro-, trisodium, (OC-6-11)- / aluminum sodium fluoride / sodiumaluminofluoride | CAS-No.: 13775-53-6 | 0 - 30 | Acute Tox. 4 (Inhalation), H332<br>STOT RE 1, H372 |
| Aluminum potassium fluoride | cryolite / Cryolite ($Na_3(AlF_6)$) / cryolith | CAS-No.: 60304-36-1 | 0 - 30 | Acute Tox. 4 (Inhalation), H332<br>Eye Irrit. 2, H319<br>Lact., H362<br>STOT RE 1, H372 |
| Barium sulfate | acid barium salt / barium salt of sulfuric acid / barium sulfate (1:1) | CAS-No.: 7727-43-7 | 0 - 10 | Not classified |
| Calcium fluoride | calcium fluoride ($CaF_2$) / fluorite / fluorspar | CAS-No.: 7789-75-5 | 0 - 10 | Not classified |
| calcium oxide | burnt lime / calcia / calcium monoxide / calcium oxide (CaO) | CAS-No.: 1305-78-8 | 0 - 10 | Skin Irrit. 2, H315<br>Eye Dam. 1, H318<br>STOT SE 3, H335 |
| Graphite | carbon-graphite / graphite,natural / graphite,powder (=grafiet) | CAS-No.: 7782-42-5 | 0 - 5 | Not classified |

| Name | Common Name (Synonyms) | Product identifier | % | GHS-US classification |
|---|---|---|---|---|
| fiberglass | glass, oxide, chemicals / soda lime borosilicate glass | CAS-No.: 65997-17-3 | 0 - 5 | Carc. 1B, H350 |
| Titanium dioxide | | CAS-No.: 13463-67-7 | 0 - 5 | Carc. 2, H351 |

Full text of hazard classes and H-statements : see section 16

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

| | |
|---|---|
| First-aid measures general | If you feel unwell, seek medical advice. |
| First-aid measures after inhalation | Remove person to fresh air and keep comfortable for breathing. When symptoms occur: go into open air and ventilate suspected area. |
| First-aid measures after skin contact | Gently wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. |
| First-aid measures after eye contact | Rinse eyes with water as a precaution. If eye irritation persists: Get medical advice/attention. |
| First-aid measures after ingestion | Rinse mouth. If necessary seek medical advice. |

### 4.2. Most important symptoms and effects (acute and delayed)

| | |
|---|---|
| Potential adverse human health effects and symptoms | Irritation: may cause irritation to the respiratory system. |
| Symptoms/effects after inhalation | May cause respiratory irritation. |
| Symptoms/effects after skin contact | None under normal conditions. Dust may cause irritation in skin folds or by contact in combination with tight clothing. |
| Symptoms/effects after eye contact | May cause severe irritation. |

### 4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

| | |
|---|---|
| Suitable extinguishing media | Water. Sand. Foam. Carbon dioxide. |
| Unsuitable extinguishing media | Do not use a heavy water stream. |

### 5.2. Specific hazards arising from the chemical

| | |
|---|---|
| Fire hazard | Not flammable. |
| Explosion hazard | No direct explosion hazard. |
| Hazardous decomposition products in case of fire | Toxic fumes may be released. |

### 5.3. Special protective equipment and precautions for fire-fighters

| | |
|---|---|
| Firefighting instructions | Use extinguishing agent suitable for surrounding fire. |
| Protection during firefighting | Do not enter fire area without proper protective equipment, including respiratory protection. |

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

| | |
|---|---|
| General measures | Notify authorities if product enters sewers or public waters. |

#### 6.1.1. For non-emergency personnel

| | |
|---|---|
| Protective equipment | Wear recommended personal protective equipment. |
| Emergency procedures | Ventilate spillage area. |

#### 6.1.2. For emergency responders

| | |
|---|---|
| Protective equipment | Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection". |

### 6.2. Environmental precautions

Avoid release to the environment.

### 6.3. Methods and material for containment and cleaning up

| | |
|---|---|
| For containment | Using a clean shovel, put the material in a dry container and cover without compressing it. |
| Methods for cleaning up | Shovel into suitable and closed container for disposal. |
| Other information | Dispose of materials or solid residues at an authorized site. |

### 6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

| | |
|---|---|
| Additional hazards when processed | Normal use of this product shall imply use in accordance with the instructions on the packaging and in line with the expectations of a professional user. |
| Precautions for safe handling | The product should not be used for purposes other than those shown above without first referring to the supplier and obtaining written handling instructions. |
| Hygiene measures | Do not eat, drink or smoke when using this product. Always wash hands after handling the product. |

### 7.2. Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| Storage conditions | Store in a dry place. |

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

| **Abrasive Products AB-Z, AC-D, AF-D, AG-D, AN-D, A24 R** | |
|---|---|
| No additional information available | |

| **trisodium hexafluoroaluminate (13775-53-6)** | |
|---|---|
| **USA - ACGIH - Occupational Exposure Limits** | |
| ACGIH OEL TWA | 2.5 mg/m³ |

| **Aluminum potassium fluoride (60304-36-1)** | |
|---|---|
| **USA - ACGIH - Occupational Exposure Limits** | |
| ACGIH OEL TWA | 2.5 mg/m³ |

| **Barium sulfate (7727-43-7)** | |
|---|---|
| **USA - ACGIH - Occupational Exposure Limits** | |
| Local name | Barium sulfate |

| **Barium sulfate (7727-43-7)** | |
|---|---|
| ACGIH OEL TWA | 5 mg/m³ (I - Inhalable particulate matter, E - The value is for particulate matter containing no asbestos and < 1 % crystalline silica) |
| Remark (ACGIH) | TLV® Basis: Pneumoconiosis |
| Regulatory reference | ACGIH 2025 |
| **USA - OSHA - Occupational Exposure Limits** | |
| Local name | Barium sulfate |
| OSHA PEL TWA | 15 mg/m³ (Total dust)<br>5 mg/m³ (Respirable fraction) |
| Regulatory reference (US-OSHA) | OSHA Annotated Table Z-1 |

| **Calcium fluoride (7789-75-5)** | |
|---|---|
| **USA - ACGIH - Occupational Exposure Limits** | |
| ACGIH OEL TWA | 2.5 mg/m³ |

| **Graphite (7782-42-5)** | |
|---|---|
| **USA - ACGIH - Occupational Exposure Limits** | |
| Local name | Graphite, all forms except graphite fibers |
| ACGIH OEL TWA | 2 mg/m³ (R - Respirable particulate matter) |
| Remark (ACGIH) | TLV® Basis: Pneumoconiosis |
| Regulatory reference | ACGIH 2025 |
| **USA - OSHA - Occupational Exposure Limits** | |
| Local name | Graphite (Natural) |
| OSHA PEL TWA | 15 mppcf |
| Remark (OSHA) | Table Z-3. CAS No. source: eCFR Table Z-1. |
| Regulatory reference (US-OSHA) | OSHA Annotated Table Z-3 Mineral Dusts |

| **calcium oxide (1305-78-8)** | |
|---|---|
| **USA - ACGIH - Occupational Exposure Limits** | |
| Local name | Calcium oxide |
| ACGIH OEL TWA | 2 mg/m³ |
| Remark (ACGIH) | URT irr |
| Regulatory reference | ACGIH 2025 |
| **USA - OSHA - Occupational Exposure Limits** | |
| Local name | Calcium oxide |
| OSHA PEL TWA | 5 mg/m³ |
| Regulatory reference (US-OSHA) | OSHA Annotated Table Z-1 |

| **zirconium dioxide (1314-23-4)** | |
|---|---|
| **USA - ACGIH - Occupational Exposure Limits** | |
| ACGIH OEL TWA | 5 mg/m³ |
| ACGIH OEL STEL | 10 mg/m³ |

| **silicon carbide (409-21-2)** | |
|---|---|
| **USA - ACGIH - Occupational Exposure Limits** | |
| Local name | Silicon carbide |
| ACGIH OEL TWA | 10 mg/m³ (Non fibrous. E - The value is for particulate matter containing no asbestos and < 1 % crystalline silica, I - Inhalable particulate matter)<br>3 mg/m³ (Non fibrous. E - The value is for particulate matter containing no asbestos and < 1 % crystalline silica, R - Respirable particulate matter) |
| | 0.1 fibers/cm³ (Fibrous (including whiskers). F - Respirable fibers) |
| Remark (ACGIH) | Non fibrous = TLV® Basis: Pulm dam<br>Fibrous (including whiskers) = TLV® Basis: Lung fibrosis; cancer. Notations: A2 (Suspected Human Carcinogen) |
| Regulatory reference | ACGIH 2025 |
| **USA - OSHA - Occupational Exposure Limits** | |
| Local name | Silicon carbide |
| OSHA PEL TWA | 15 mg/m³ (Total dust)<br>5 mg/m³ (Respirable fraction) |
| Regulatory reference (US-OSHA) | OSHA Annotated Table Z-1 |

| **Aluminium oxide (1344-28-1)** | |
|---|---|
| **USA - OSHA - Occupational Exposure Limits** | |
| Local name | alpha-Alumina |
| OSHA PEL TWA | 15 mg/m³ (Total dust)<br>5 mg/m³ (Respirable fraction) |
| Regulatory reference (US-OSHA) | OSHA Annotated Table Z-1 |

| **Iron sulfide (FeS2) (12068-85-8)** |
|---|
| No additional information available |

| **phenol/formaldehyde, resins (9003-35-4)** |
|---|
| No additional information available |

| **fiberglass (65997-17-3)** | |
|---|---|
| **USA - ACGIH - Occupational Exposure Limits** | |
| ACGIH OEL TWA | 1 fibers/cm³ (Respirable fibers: length > 5 µm; aspect ratio ≥ 3:1, as determined by the membrane filter method at 400-450X magnification (4-mm objective), using phase-contrast illumination)<br>1 fibers/cm³ (Respirable fibers: length > 5 µm; aspect ratio ≥ 3:1, as determined by the membrane filter method at 400-450X magnification (4-mm objective), using phase-contrast illumination)<br>5 mg/m³ (Inhalable fraction) |

| Titanium dioxide (13463-67-7) | |
|---|---|
| **USA - ACGIH - Occupational Exposure Limits** | |
| Local name | Titanium dioxide |
| ACGIH OEL TWA | 0.2 mg/m³ (Nanoscale particles. R - Repirable particulate matter)<br>2.5 mg/m³ (Finescale particles. R - Repirable particulate matter) |
| Remark (ACGIH) | TLV® Basis: LRT irr; pneumoconiosis. Notations: A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans) |
| Regulatory reference | ACGIH 2025 |
| **USA - OSHA - Occupational Exposure Limits** | |
| Local name | Titanium dioxide (Total dust) |
| OSHA PEL TWA | 15 mg/m³ |
| Regulatory reference (US-OSHA) | OSHA Annotated Table Z-1 |

## 8.2. Appropriate engineering controls

Appropriate engineering controls: Ensure good ventilation of the work station.

## 8.3. Individual protection measures/Personal protective equipment

**Personal protective equipment:**

Dust formation: dust mask. In case of dust production: protective goggles. Gloves. Protective clothing.

| **Materials for protective clothing:** | |
|---|---|
| **Condition** | **Material** |
| | Flame retardant protective clothing |

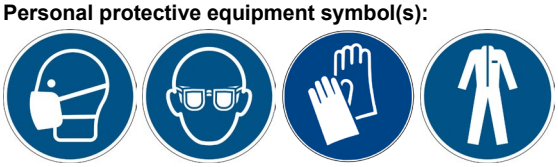
| **Hand protection:** |
|---|
| Protective gloves |

| **Eye protection:** | | |
|---|---|---|
| Safety glasses | | |
| **Type** | **Field of application** | **Characteristics** |
| Safety glasses | Dust | |

| **Skin and body protection:** |
|---|
| Wear suitable protective clothing |

| **Respiratory protection:** | | |
|---|---|---|
| Where exposure through inhalation may occur from use, respiratory protection equipment is recommended | | |
| **Device** | **Filter type** | **Condition** |
| | | Dust protection |

**Personal protective equipment symbol(s):**



**Other information:**

Hazardous dust of the workpiece material may be generated during grinding / drilling and / or sanding operations. National regulations for dust exposure limit values have to be taken into consideration as part of the job hazard assessment.

Most of the dust generated during grinding is from the base material being ground and the potential hazard from this exposure must be evaluated. This dust may present a fire or dust explosion hazard and may present a serious health hazard.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

| | |
|---|---|
| Physical state | Solid |
| Colour | brown to dark brown |
| Odour | odourless |
| Odour threshold | No data available |
| pH | No data available |
| Melting point | No data available |
| Freezing point | Not applicable |
| Boiling point | No data available |
| Flash point | Not applicable |
| Relative evaporation rate (butylacetate=1) | No data available |
| Flammability (solid, gas) | Non flammable. |
| Vapour pressure | No data available |
| Relative vapour density at 20°C | No data available |
| Relative density | No data available |
| Solubility | insoluble in water. |
| Partition coefficient n-octanol/water (Log Pow) | No data available |
| Auto-ignition temperature | Not applicable |
| Decomposition temperature | No data available |
| Viscosity, kinematic | Not applicable |
| Viscosity, dynamic | No data available |
| Explosive limits | Not applicable |
| Explosive properties | No data available |
| Oxidising properties | No data available |

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport. Product is not explosive.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Do not expose to temperatures above 250°C. Hazardous decomposition byproducts may form with exposure to high temperatures.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

| | |
|---|---|
| Acute toxicity (oral) | Not classified |
| Acute toxicity (dermal) | Not classified |
| Acute toxicity (inhalation) | Not classified |

| **trisodium hexafluoroaluminate (13775-53-6)** | |
|---|---|
| LD50 oral rat | > 5000 mg/kg bodyweight (EU Method B.1) |
| LD50 dermal rat | > 2100 mg/kg bodyweight (OECD 402 method) |
| LC50 Inhalation - Rat | 4.47 mg/l air (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation (aerosol), 14 day(s)) |

| **Aluminum potassium fluoride (60304-36-1)** | |
|---|---|
| LC50 Inhalation - Rat | 4.5 mg/l air (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation (aerosol), 14 day(s)) |

| **Barium sulfate (7727-43-7)** | |
|---|---|
| LD50 oral rat | > 5000 mg/kg bodyweight (OECD 401 method) |
| LD50 dermal rat | > 2000 mg/kg bodyweight ((OECD 402 method); <tx:KFT_READ-ACROSS>) |

| **Calcium fluoride (7789-75-5)** | |
|---|---|
| LD50 oral rat | > 2000 mg/kg bodyweight (OECD 423: Acute Oral Toxicity – Acute Toxic Class Method, Rat, Female, Experimental value, Oral, 14 day(s)) |
| LD50 dermal rat | > 2000 mg/kg bodyweight (EPA OPP 81-2, 24 h, Rat, Male / female, Experimental value, Dermal, 14 day(s)) |

| **Graphite (7782-42-5)** | |
|---|---|
| LD50 oral rat | > 2000 mg/kg (OECD 423) |
| LC50 Inhalation - Rat | > 2000 mg/m³ (4h; OECD 403) |

| **calcium oxide (1305-78-8)** | |
|---|---|
| LD50 oral rat | > 2000 mg/kg (OECD 425 method) |
| LD50 dermal rat | > 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Guideline: EU Method B.3 (Acute Toxicity (Dermal)) |
| LD50 dermal rabbit | > 2500 mg/kg (OECD 402 method) |
| LC50 Inhalation - Rat | > 6.04 mg/l (OECD 436: Acute inhalation toxicity-acute toxic class method, 4 h, Rat, Male / female, Experimental value, Inhalation (dust), 15 day(s)) |

| zirconium dioxide (1314-23-4) | |
|---|---|
| LD50 oral rat | > 5000 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: OECD Guideline 423 (Acute Oral toxicity - Acute Toxic Class Method), Guideline: EU Method B.1 tris (Acute Oral Toxicity - Acute Toxic Class Method) |
| LC50 Inhalation - Rat | > 4.3 mg/l (OECD 436: Acute inhalation toxicity-acute toxic class method, 4 h, Rat, Male / female, Experimental value, Inhalation (aerosol), 14 day(s)) |

| silicon carbide (409-21-2) | |
|---|---|
| LD50 oral rat | > 2000 mg/kg |
| LD50 dermal rat | > 2000 mg/kg |

| Aluminium oxide (1344-28-1) | |
|---|---|
| LD50 oral rat | > 15900 mg/kg |
| LC50 Inhalation - Rat | 7.6 mg/l |
| LC50 Inhalation - Rat (Dust/Mist) | > 2.3 mg/l/4h (OECD 403 method) |

| phenol/formaldehyde, resins (9003-35-4) | |
|---|---|
| LD50 oral rat | > 5000 mg/kg |
| LD50 dermal rat | > 2000 mg/kg |

| Titanium dioxide (13463-67-7) | |
|---|---|
| LD50 oral rat | > 2000 mg/kg bodyweight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral, 14 day(s)) |
| LD50 oral | 5000 mg/kg |
| LC50 Inhalation - Rat | > 5.09 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male, Experimental value, Inhalation (dust), 14 day(s)) |

| | |
|---|---|
| Skin corrosion/irritation | Not classified |
| Serious eye damage/irritation | Not classified |
| Respiratory or skin sensitisation | Not classified |
| Germ cell mutagenicity | Not classified |
| Carcinogenicity | Not classified |

| silicon carbide (409-21-2) | |
|---|---|
| IARC group | 2A - Probably carcinogenic to humans |

| Titanium dioxide (13463-67-7) | |
|---|---|
| IARC group | 2B - Possibly carcinogenic to humans |

| | |
|---|---|
| Reproductive toxicity | Not classified |
| STOT-single exposure | Not classified |

| calcium oxide (1305-78-8) | |
|---|---|
| STOT-single exposure | May cause respiratory irritation. |

| | |
|---|---|
| STOT-repeated exposure | Not classified |

| trisodium hexafluoroaluminate (13775-53-6) | |
|---|---|
| STOT-repeated exposure | Causes damage to organs through prolonged or repeated exposure. |

| Aluminum potassium fluoride (60304-36-1) | |
|---|---|
| STOT-repeated exposure | Causes damage to organs through prolonged or repeated exposure. |

| calcium oxide (1305-78-8) | |
|---|---|
| NOAEL (oral, rat, 90 days) | 1000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test) |

| | |
|---|---|
| Aspiration hazard | Not classified |
| Viscosity, kinematic | Not applicable |
| Likely routes of exposure | Inhalation. |
| Potential adverse human health effects and symptoms | Irritation: may cause irritation to the respiratory system. |
| Symptoms/effects after inhalation | May cause respiratory irritation. |
| Symptoms/effects after skin contact | None under normal conditions. Dust may cause irritation in skin folds or by contact in combination with tight clothing. |
| Symptoms/effects after eye contact | May cause severe irritation. |

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

| trisodium hexafluoroaluminate (13775-53-6) | |
|---|---|
| LC50 - Fish [1] | 99 mg/l (96 h; Danio rerio; (OECD 203 method)) |
| EC50 - Crustacea [1] | 156 mg/l (48 h; Daphnia magna; (OECD 202 method)) |
| EC50 72h - Algae [1] | 3.2 mg/l (OECD 201: Alga, Growth Inhibition Test, Selenastrum capricornutum, Static system, Fresh water, Experimental value, Biomass) |
| ErC50 algae | 3.2 mg/l (72 h; Pseudokirchneriella subcapitata; (OECD 201 method)) |

| Aluminum potassium fluoride (60304-36-1) | |
|---|---|
| LC50 - Fish [1] | 99 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Brachydanio rerio, Static system, Fresh water, Experimental value) |
| EC50 - Crustacea [1] | 156 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value) |
| EC50 72h - Algae [1] | 3.2 mg/l (OECD 201: Alga, Growth Inhibition Test, Selenastrum capricornutum, Static system, Fresh water, Experimental value, Biomass) |

| Barium sulfate (7727-43-7) | |
|---|---|
| LC50 - Fish [1] | > 174 mg/l (96 h; Danio rerio; (OECD 203 method)) |
| EC50 - Crustacea [1] | 14.5 mg/l (48 h; Daphnia magna; Barium) |
| ErC50 algae | > 100 mg/l (72 h; Pseudokirchneriella subcapitata; (OECD 201 method)) |
| NOEC chronic fish | > 100 mg/l (33 d; Danio rerio; (OECD 210 method)) |
| NOEC chronic crustacea | 5.8 mg/l (48 h; Daphnia magna; Barium) |

| **Calcium fluoride (7789-75-5)** | |
|---|---|
| LC50 - Fish [1] | 164.5 ppm (EPA 600/3-75/009, 96 h, Salmo trutta, Static system, Fresh water, Experimental value, Fluorine ion) |
| **Graphite (7782-42-5)** | |
| LC50 - Fish [1] | > 100 mg/l (96h; Danio rerio; OECD 203) |
| EC50 - Crustacea [1] | > 100 mg/l (48h; Daphnia magna; OECD 202) |
| EC50 72h - Algae [1] | > 100 mg/l (72h; Pseudokirchnerella subcapitata; OECD 201) |
| **calcium oxide (1305-78-8)** | |
| LC50 - Fish [1] | 50.6 mg/l (96 h; Oncorhynchus mykiss; (OECD 203 method)) |
| EC50 - Crustacea [1] | 49.1 mg/l (48 h; Daphnia magna; (OECD 202 method)) |
| EC50 72h - Algae [1] | 184.57 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum) |
| ErC50 algae | 184.57 mg/l (72 h; Pseudokirchneriella subcapitata; (OECD 201 method)) |
| NOEC (chronic) | 32 mg/l Test organisms (species): Crangon septemspinosa Duration: '14 d' |
| **zirconium dioxide (1314-23-4)** | |
| LC50 - Fish [1] | > 100 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio) |
| EC50 - Crustacea [1] | > 100 mg/l (EU Method C.2, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP) |
| EC50 72h - Algae [1] | > 100 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus) |
| ErC50 algae | > 100 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Read-across, GLP) |
| **silicon carbide (409-21-2)** | |
| ErC50 algae | > 100 mg/l (OECD 201: Alga, Growth Inhibition Test, 48 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, GLP) |
| NOEC chronic crustacea | ≥ 100 mg/l (22d;Daphnia magna; OECD Guideline 211) |
| **Titanium dioxide (13463-67-7)** | |
| LC50 - Fish [1] | > 1000 mg/l (Pisces, Fresh water) |
| LC50 - Other aquatic organisms [1] | > 10000 mg/l |
| EC50 - Crustacea [1] | > 1000 mg/l (Invertebrata, Fresh water) |
| EC50 - Crustacea [2] | > 10000 mg/l |
| EC50 72h - Algae [1] | > 100 mg/l (OECD 201: Alga, Growth Inhibition Test, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Growth rate) |
| ErC50 algae | 61 mg/l (EPA 600/9-78-018, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Nominal concentration) |

## 12.2. Persistence and degradability

| **Abrasive Products AB-Z, AC-D, AF-D, AG-D, AN-D, A24 R** | |
|---|---|
| Persistence and degradability | Not applicable for inorganic products. |

| **trisodium hexafluoroaluminate (13775-53-6)** | |
|---|---|
| Persistence and degradability | Biodegradability: not applicable. |
| Chemical oxygen demand (COD) | Not applicable |
| ThOD | Not applicable |
| BOD (% of ThOD) | Not applicable |

| **Aluminum potassium fluoride (60304-36-1)** | |
|---|---|
| Persistence and degradability | Biodegradability: not applicable. |
| Chemical oxygen demand (COD) | Not applicable |
| ThOD | Not applicable |
| BOD (% of ThOD) | Not applicable |

| **Barium sulfate (7727-43-7)** | |
|---|---|
| Persistence and degradability | Not applicable. |
| Chemical oxygen demand (COD) | Not applicable (inorganic) |
| ThOD | Not applicable (inorganic) |

| **Calcium fluoride (7789-75-5)** | |
|---|---|
| Persistence and degradability | Biodegradability: not applicable. |
| Chemical oxygen demand (COD) | Not applicable (inorganic) |
| ThOD | Not applicable (inorganic) |

| **Graphite (7782-42-5)** | |
|---|---|
| Persistence and degradability | Biodegradability: not applicable. |
| Chemical oxygen demand (COD) | Not applicable |
| ThOD | Not applicable |
| BOD (% of ThOD) | Not applicable |

| **calcium oxide (1305-78-8)** | |
|---|---|
| Persistence and degradability | Biodegradability: not applicable. |
| Chemical oxygen demand (COD) | Not applicable (inorganic) |
| ThOD | Not applicable (inorganic) |

| **zirconium dioxide (1314-23-4)** | |
|---|---|
| Persistence and degradability | Biodegradability: not applicable. |
| Chemical oxygen demand (COD) | Not applicable (inorganic) |
| ThOD | Not applicable (inorganic) |

| **silicon carbide (409-21-2)** | |
|---|---|
| Persistence and degradability | Biodegradability: not applicable. |
| Chemical oxygen demand (COD) | Not applicable (inorganic) |
| ThOD | Not applicable (inorganic) |

| **Aluminium oxide (1344-28-1)** | |
|---|---|
| Not rapidly degradable | |
| Persistence and degradability | Not applicable. |

| **phenol/formaldehyde, resins (9003-35-4)** | |
|---|---|
| Persistence and degradability | Biodegradability in water: no data available. |

| **fiberglass (65997-17-3)** | |
|---|---|
| Not rapidly degradable | |
| Persistence and degradability | Biodegradability: not applicable. |
| Chemical oxygen demand (COD) | Not applicable |
| ThOD | Not applicable |
| BOD (% of ThOD) | Not applicable |

| **Titanium dioxide (13463-67-7)** | |
|---|---|
| Not rapidly degradable | |
| Persistence and degradability | Biodegradability: not applicable. |
| Chemical oxygen demand (COD) | Not applicable (inorganic) |
| ThOD | Not applicable (inorganic) |

## 12.3. Bioaccumulative potential

| **Abrasive Products AB-Z, AC-D, AF-D, AG-D, AN-D, A24 R** | |
|---|---|
| Bioaccumulative potential | Bioaccumulation unlikely. |

| **trisodium hexafluoroaluminate (13775-53-6)** | |
|---|---|
| Bioaccumulative potential | Bioaccumulation: not applicable. |

| **Aluminum potassium fluoride (60304-36-1)** | |
|---|---|
| Bioaccumulative potential | Bioaccumulation: not applicable. |

| **Barium sulfate (7727-43-7)** | |
|---|---|
| BCF - Fish [1] | 1.2 – 74.4 l/kg (Lepomis macrochirus, Fresh water, Experimental value) |
| Bioaccumulative potential | Low potential for bioaccumulation (BCF < 500). |

| **Calcium fluoride (7789-75-5)** | |
|---|---|
| BCF - Fish [1] | 0 – 6.4 l/kg (OECD 305: Bioconcentration: Flow-Through Fish Test, 28 day(s), Cyprinus carpio, Fresh water, Experimental value, GLP) |
| Bioaccumulative potential | Low potential for bioaccumulation (BCF < 500). |

| **Graphite (7782-42-5)** | |
|---|---|
| Bioaccumulative potential | Not bioaccumulative. |

| **calcium oxide (1305-78-8)** | |
|---|---|
| Bioaccumulative potential | Not bioaccumulative. |

| **zirconium dioxide (1314-23-4)** | |
|---|---|
| BCF - Other aquatic organisms [1] | 0.64 l/kg (4 h, Chlorella sp., Fresh water, Read-across, Fresh weight) |
| Bioaccumulative potential | Low potential for bioaccumulation (BCF < 500). |

| **silicon carbide (409-21-2)** | |
|---|---|
| Bioaccumulative potential | Not bioaccumulative. |

| **Aluminium oxide (1344-28-1)** | |
|---|---|
| Bioaccumulative potential | Not applicable. |

| **phenol/formaldehyde, resins (9003-35-4)** | |
|---|---|
| Bioaccumulative potential | No bioaccumulation data available. |

| **fiberglass (65997-17-3)** | |
|---|---|
| Bioaccumulative potential | No bioaccumulation data available. |

| **Titanium dioxide (13463-67-7)** | |
|---|---|
| Bioaccumulative potential | Not bioaccumulative. |

### 12.4. Mobility in soil

| **trisodium hexafluoroaluminate (13775-53-6)** | |
|---|---|
| Organic Carbon Normalized Adsorption Coefficient (Log Koc) | 2.8 – 3.8 (log Koc, Other, Experimental value) |
| Ecology - soil | Low potential for mobility in soil. Toxic to soil organisms. |

| **Aluminum potassium fluoride (60304-36-1)** | |
|---|---|
| Organic Carbon Normalized Adsorption Coefficient (Log Koc) | 2.8 – 3.8 (log Koc, Other, Experimental value) |
| Ecology - soil | Low potential for mobility in soil. Toxic to soil organisms. |

| **Barium sulfate (7727-43-7)** | |
|---|---|
| Surface tension | No data available in the literature |
| Ecology - soil | No (test)data on mobility of the substance available. |

| **Calcium fluoride (7789-75-5)** | |
|---|---|
| Surface tension | No data available in the literature |
| Ecology - soil | No (test)data on mobility of the substance available. |

| **calcium oxide (1305-78-8)** | |
|---|---|
| Surface tension | No data available in the literature |
| Ecology - soil | No (test)data on mobility of the substance available. |

| zirconium dioxide (1314-23-4) | |
|---|---|
| Ecology - soil | Adsorbs into the soil. |

| silicon carbide (409-21-2) | |
|---|---|
| Surface tension | No data available in the literature |
| Ecology - soil | Low potential for adsorption in soil. |

| fiberglass (65997-17-3) | |
|---|---|
| Ecology - soil | No (test)data on mobility of the substance available. |

| Titanium dioxide (13463-67-7) | |
|---|---|
| Surface tension | No data available in the literature |
| Ecology - soil | Low potential for mobility in soil. |

### 12.5. Other adverse effects

Other information: Do not allow the product, as is, to spread into the environment.

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Regional waste regulation: Disposal must be done according to official regulations.
Waste treatment methods: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations: Dispose in a safe manner in accordance with local/national regulations.
Ecological information: Avoid release to the environment. Hazardous waste due to toxicity.

## SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

| DOT | TDG | IMDG | IATA |
|---|---|---|---|
| **14.1. UN number** | | | |
| Not regulated for transport | | | |
| **14.2. Proper Shipping Name** | | | |
| Not regulated | Not regulated | Not regulated | Not regulated |
| **14.3. Transport hazard class(es)** | | | |
| Not regulated | Not regulated | Not regulated | Not regulated |
| **14.4. Packing group** | | | |
| Not regulated | Not regulated | Not regulated | Not regulated |
| **14.5. Environmental hazards** | | | |
| Not regulated | Not regulated | Not regulated | Not regulated |
| No supplementary information available | | | |

### 14.6. Special precautions for user

**DOT**
Not regulated

**TDG**
Not regulated

**IMDG**
Not regulated

**IATA**
Not regulated

### 14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Not applicable

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

| | | |
|---|---|---|
| Aluminium oxide | CAS-No. 1344-28-1 | < 100% |

### 15.2. International regulations

**silicon carbide (409-21-2)**

Listed on IARC (International Agency for Research on Cancer)

**Titanium dioxide (13463-67-7)**

Listed on IARC (International Agency for Research on Cancer)
Listed on Thailand Existing Chemicals Inventory (DIW)

### 15.3. US State regulations

⚠ **WARNING:** This product can expose you to Titanium dioxide (airborne, unbound particles of respirable size), which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

## SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date 04/01/2025

Data sources European Chemicals Agency, http://echa.europa.eu/. manufacturer.

| Full text of H-statements | |
|---|---|
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H318 | Causes serious eye damage. |
| H319 | Causes serious eye irritation. |
| H332 | Harmful if inhaled. |

| Full text of H-statements | |
|---|---|
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| H335 | May cause respiratory irritation. |
| H350 | May cause cancer. |
| H351 | Suspected of causing cancer. |
| H362 | May cause harm to breast-fed children. |
| H372 | Causes damage to organs through prolonged or repeated exposure. |

| Abbreviations and acronyms | |
|---|---|
| CAS-No. | Chemical Abstract Service number |
| ADN | European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways |
| ADR | European Agreement concerning the International Carriage of Dangerous Goods by Road |
| ATE | Acute Toxicity Estimate |
| CLP | Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008 |
| DNEL | Derived-No Effect Level |
| EC50 | Median effective concentration |
| ED | Endocrine disrupting properties |
| EC-No. | European Community number |
| EN | European Standard |
| IATA | International Air Transport Association |
| IMDG | International Maritime Dangerous Goods |
| IOELV | Indicative Occupational Exposure Limit Value |
| LC50 | Median lethal concentration |
| LD50 | Median lethal dose |
| NOEC | No-Observed Effect Concentration |
| OECD | Organisation for Economic Co-operation and Development |
| N.O.S. | Not Otherwise Specified |
| OEL | Occupational Exposure Limit |
| PBT | Persistent Bioaccumulative Toxic |
| PNEC | Predicted No-Effect Concentration |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006 |
| RID | Regulations concerning the International Carriage of Dangerous Goods by Rail |
| SDS | Safety Data Sheet |
| STP | Sewage treatment plant |
| TLM | Median Tolerance Limit |

# Abrasive Products AB-Z, AC-D, AF-D, AG-D, AN-D, A24 R

## Safety Data Sheet

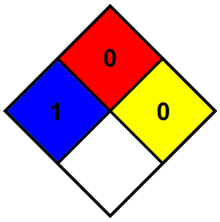
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

| Abbreviations and acronyms | |
|---|---|
| TRGS | Technical Rules for Hazardous Substances |
| VOC | Volatile Organic Compounds |
| WGK | Water Hazard Class |
| vPvB | Very Persistent and Very Bioaccumulative |
| NOAEL | No-Observed Adverse Effect Level |
| NOAEC | No-Observed Adverse Effect Concentration |
| LOAEL | Lowest Observed Adverse Effect Level |

NFPA health hazard — 1 - Materials that, under emergency conditions, can cause significant irritation.

NFPA fire hazard — 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity — 0 - Material that in themselves are normally stable, even under fire conditions.




Hazard Rating

Health — 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability — 0 Minimal Hazard - Materials that will not burn

Physical — 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

| Indication of changes: | | | |
|---|---|---|---|
| **Section** | **Changed item** | **Change** | **Comments** |
| 3 | Composition/information on ingredients | Modified | |
| 8.1 | Occupational Exposure Limits | Modified | |

SDS_US_Hilti

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.