



Beratung - Schadensfallaufklärung - Qualitätssicherung - Forschung - Prüfung

- Prüflabor für Korrosion, Korrosionsschutz und Korrosionsanalytik
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Investigation Report UB500/014/21

Orderer: NZM Grit NV
De Zate 2
2480 Dessel (BELGIUM)

Date of order: 05.03.2021

Receipt of samples: 05.03.2021

Test period: 05.03.2021 – 14.04.2021

Order: Investigation of abrasive agent on toxic, carcinogenic and crystalline silica components

Laboratory order No.: LA5/51/21/215046, LA4/85/21/215046

Pages: 5

Responsible examiner: Dipl.-Ing. Rick Ottolinger

Head of department: Dr.-Ing. Jörg Gehrke

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Dresden, 14.04.2021

1 Task

The Institut für Korrosionsschutz Dresden GmbH was given the task by NZM Grit NV to analyse the abrasive agent Bekagrit on its crystalline silica, toxic and carcinogenic components. The information on the abrasive agent and the results of the tests are provided in the following text.

2 Requirements for abrasive agents and tests of the requirements

According to the requirements of Paragraph 3.2, Chapter 2.24 (Work with abrasive agents) of the BGR 500, dated October 2004, version 18 February 2005 (up to January 2005: § 7 of the BGV D26 "Work with abrasive agents") the content of crystalline silica (quartz, cristobalite, tridymite) in the abrasive agent may not exceed 2 weight percent. In addition, it must be assured that the sum of all the toxic and carcinogenic metals or their compounds (calculated as metal; chromate calculated as CrO_3) contained in the abrasive agent does not exceed 2 weight percent. Carcinogenic metals and their compounds (each calculated as metals; chromate calculated as CrO_3) may not exceed 0.2 weight percent. Beryllium, cadmium, cobalt (calculated as a metal), and chromate (calculated as CrO_3) may not exceed 0.1 weight percent individually.

3 Testing methods

Tests are conducted using known mineralogical and chemical analytic procedures (X-ray diffraction, ICP mass spectrometry, photometry). The XRD-analyses of the crystalline silica components were done by the Fraunhofer IKTS Dresden.

4 General Information on the abrasive

Trade name (trade identification reference)	Bekagrit
Manufacturer	see orderer
Type of abrasive agent	copper slag
Grain	0 – 2,5 mm

5 Detailed information on the abrasive agent provided

5.1 Sample of abrasive taken by or in presence of

Client	<input checked="" type="checkbox"/>
Manufacturer	<input checked="" type="checkbox"/>
Seller / agent	<input checked="" type="checkbox"/>
User	<input type="checkbox"/>
Technical monitoring body of the BG	<input type="checkbox"/>
Trade supervisory body	<input type="checkbox"/>
Testing agency / testing body	<input type="checkbox"/>

Independent of the total quantity of the abrasive provided for testing, only a random sample will be used in the laboratory analysis.

5.2 Manufacturer information on the composition of the abrasive

Chemical average analysis:

Fe ₂ O ₃	45 - 65 %
SiO ₂	25 - 35 %
Al ₂ O ₃	2 - 9 %
CaO	0 - 2 %
Na ₂ O	0 - 1 %
K ₂ O	0 - 1 %
TiO ₂	0 - 1 %
MgO	0 - 1 %

5.3 Manufacturer information on the properties and intended uses

Blasting of metals and stone/concrete, removing of mill scale, rust, old coatings, dirt etc.

6 Test results

The mineralogical and chemical analysis of the abrasive agent sample found, in weight percentage(s):

6.1 Crystalline silica components

Quartz:	< 0,5
Cristobalite:	< 0,5
Tridymite:	----
Sum of crystalline components:	< 1,0

6.2 Toxic components

Antimony:	< 0,0019
Lead:	0,736
Cadmium:	< 0,0019
Tin:	0,209
Sum of the toxic components:	< 0,9488

6.3 Carcinogenic components

Arsenic:	< 0,0094
Beryllium:	0,002
Chromate:	< 0,002
Cobalt:	0,047
Nickel:	0,052
Sum of the carcinogenic components:	< 0,1124

6.4 According to the present analytic results, the permissible limits for the sum of the

Crystalline silica components	exceeded	<input type="checkbox"/>	not exceeded	<input checked="" type="checkbox"/>
Carcinogenic components	exceeded	<input type="checkbox"/>	not exceeded	<input checked="" type="checkbox"/>
Carcinogenic and toxic components	exceeded	<input type="checkbox"/>	not exceeded	<input checked="" type="checkbox"/>

7 Assessment

Based on the results of the analysis and the present manufacturer guarantee, and assessed in comparison to the requirements for non-silica-containing abrasive agents as defined

fulfilled

not fulfilled

8 Guarantees of the manufacturer (agent / seller) or the user

If the present investigation report is to be used by the manufacturer (seller / agent) as evidence that the abrasive agent named under point 4 above fulfils the requirements, of the BGR 500, dated October 2004, version 18 February 2005 (up to January 2005: § 7 of the BGV D26 "Work with abrasive agents") the manufacturer (seller / agent) must guarantee – in the case of a one-time use of the abrasive agent – that the compound does not deviate from the values given under point 6 above for crystalline silica, toxic, and carcinogenic compounds or that any deviation is so insignificant as to fulfill the requirements under point 2.

The present investigation report may not serve as evidence of a non-crystalline silica abrasive agent in the case of multiple or repeated use. In the latter scenario, the user must guarantee that the requirements described under point 2 are fulfilled.

9 Validity of the investigation report

This investigation report is valid until

April 2024

The validity of an investigation report may be extended only once and only upon request. A renewed analysis of the abrasive agent is required before a new investigation report can be issued following such an extension.