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Gelsenkirchen, 15.05.2008

TEST REPORT
on the scientific examination of the water conditioning chemical Ferrosil® 8155 according to water-hygienic aspects

- English version dated 07/04/2004 (Ref.: C-116253-04-Ko/st) -

Redraft with extension of validity
(Ref.-No.: C-120624-04-Ko/st dated 03.09.2004)

Applicant:	BK Giulini GmbH Niederheider Str. 22 / Geb. Y20 40589 Düsseldorf
Order from:	06/01/2004 (reference: dept. TSI-D)
Test material:	Ferrosil® 8155
Date of receipt of test items:	03/02/2004
Start of the test:	10/02/2004
Description of the material:	This material is an alkaline liquid product. The product is applied as anticorrosive agent as well as scale inhibitor.

This test report consists of 4 pages.

Criteria of assessment:

Directive on the amendment of the *Trinkwasserverordnung* (drinking water regulation) from May 21rst 2001, BGB (German Civil Code) l. I, N°. 24 from 28/05/2001, pp. 959-981.

List of water conditioning chemicals and disinfection methods pursuant to § 11 of the *Trinkwasserverordnung* (drinking water regulation) from 2001.

Guideline 98/93/EU of the council on the quality of water intended for human consumption from Nov. 3rd 1998 (official gazette of the European Communities N°. L 330), p. 32.

Assessment:

Ferrosil® 8155 is used for the conditioning of drinking water as well as industrial water in order to prevent corrosion and sedimentation in the piping system. The chemicals that are ingredients of the liquid Ferrosil® 8155 according to the recipe given to us are permitted in accordance with the list of water conditioning chemicals and disinfection methods issued by the Federal Environment Agency in 2001.

The ingredients of Ferrosil® 8155 complies with the purity standards laid down in the list of water conditioning chemicals and disinfection methods (e.g. DIN EN 1209 table 1 and 2) as attested by the corresponding certificates.

The heavy metals listed in the drinking water regulation also show concentrations below the detection limit or within a concentration range, which cannot cause a detectable increase in concentration as far as the dosage for drinking water is concerned (see page 4). Ferrosil® 8155 does not contain organic additives.

Ferrosil® 8155 may be added to drinking water as anticorrosive agent and as scale inhibitor up to a dosage so that the limit values of 2.2 mg/l P and 15 mg/l SiO_2 are not exceeded. As to the dosage of substances showing an alkaline reaction, it is important that the limit of the pH value of 9.5 is not exceeded. It is thus exactly laid down up to which dosage the components of Ferrosil® 8155 may be added to drinking or service water in the food industry.

We strongly recommend regular maintenance of the technical dosing devices as well as checking the observance of the drinking water regulation with regard to the pH value by chemical analysis e.g. along with the maintenance work to be done regularly. As to the recipe and as our scientific examinations have shown, there are no objections to adding Ferrosil® 8155 to drinking or service water as far as drinking water hygiene is concerned, provided that composition and purity of the used product are identical with those of the examined sample.

It is important that, in the conditioned drinking water, the limit values of the *Trinkwasserverordnung* (drinking water regulation) as well as the standards regarding the purity of the additive in pursuance of the list of water conditioning chemicals and disinfection methods (e.g. DIN EN 1209) are observed.

Microbiological Examination:

In order to examine the bacterial contamination of the product concentrate, 1 ml was analysed according to the *Trinkwasserverordnung* (drinking water regulation) from 2001 with regard to the number of colonies at an incubation temperature of 22°C and of 36°C.

According to the examination results, the water conditioning chemical Ferrosil® 8155 shows only insignificant or no contamination with bacteria relevant according to water-hygienic aspects, as no bacteria could be detected.

The present assessment will be annulled in total or in parts when new regularizations, regulations, standards, and norms etc. take effect, provided that they are contrary to the present criteria of assessment.

The Director of the Institute
on behalf

(Dr.rer.nat. A. Koch)

- Test results -

Analysis of the water conditioning chemical Ferrosil® 8155 received on 03/02/2004

Parameter		Unit	Concentration
pH value of 1% solution			10,2
Silicate	SiO_2	%	4,0
Phosphate	PO_4	%	4,8
Cyanide	CN	mg/kg	< 2
Fluoride	F	mg/kg	< 1
Iron	Fe	mg/kg	9,2
Antimony	Sb	mg/kg	< 0,05
Arsenic	As	mg/kg	< 0,1
Lead	Pb	mg/kg	0,072
Chromium	Cr	mg/kg	0,15
Mercury	Hg	mg/kg	< 0,004
Nickel	Ni	mg/kg	0,076
Selenium	Se	mg/kg	< 0,05