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Ref.: C-119660-04-Sf/st
Contact Person: Mrs. Stefanski

TEST CERTIFICATE
according to the KTW-Recommendations
(Bundesgesundheitsblatt Vol. 20, page 124 ff., 1977)

- English version (Ref.: C-119641-04-Sf/st dated 04.08.2004) -

Applicant:

Rich. Klinger
Dichtungstechnik GmbH & Co KG
Am Kanal 8-10

A-2352 Gumpoldskirchen
ÖSTERREICH

Product:

KLINGERSIL®C-4500 (black)

Kind of test:

☒ Producttest / Permissiontest

☐ Supervisiontest

The test plates **KLINGERSIL®C-4500** (black) meets the requirements of the KTW-Recommendations according to the test report (Ref.: C-119660-04-Sf/st dated 04.08.2004) for the following applications and temperatures:

Applications:

Temperatures:

	cold water (23°C)	moderately hot water (60°C)	extremely hot water (90°C)
A Pipes	---	---	---
B Reservoirs / Containers	---	---	---
C Ancillaries / Fittings	---	---	---
D1 large gaskets	---	---	---
D2 small gaskets	passed	---	---

as far as the material is qualified technically.

This test certificate is valid beginning with date of issue and ending by **04.08.2009**, as far as there are no changes in the formula. After this time it can be extended for further 5 years if demanded.

Gelsenkirchen, 04.08.2004



The Director of the Institute
on behalf of

(Priv.-Doz.Dr. Tuschewitzki)

Durch die DAP Deutsches Akkreditierungssystem
GmbH akkreditiertes Prüflaboratorium
Die Akkreditierung gilt für die in der Urkunde
aufgeführten Prüfverfahren.

Deutscher Akkreditierungsrat
DAR
DAP-PL-2548.00

The test certificate shall not be reproduced except in full, without written approval of the Institute.

The test results refers to the specimen. This test certificate is no DVGW-Certification.

Träger des Hygiene-Instituts:
Verein zur Bekämpfung der Volkskrankheiten
im Ruhrkohlegebiet e.V., Gelsenkirchen



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TEST REPORT
according to the KTW-Recommendations
(Bundesgesundheitsblatt Vol. 20, page 124 ff., 1977)

- English version (Ref.: C-119642-04-Sf/st dated 04.08.2004) -

Applicant: Rich. Klinger
Dichtungstechnik GmbH & Co KG
Am Kanal 8-10

A-2352 Gumpoldskirchen
ÖSTERREICH

Order of: 05.04.2004 (Ref.: Mü)

Field of application: small gaskets (Category D2)
cold water area

Product: KLINGERSIL® C-4500 (black)

Specimen: test plates (measuring: 210 mm x 149 mm x 2 mm)

Date of receipt: 27.04.2004

Sampler: received by mail

Start of migration test: 22.06.2004

Assessment:

The test plates KLINGERSIL® C-4500 (black) arrived here 27.04.2004 meets the requirements of the KTW-Recommendations for "small gaskets" (Category D2) in the cold water test (23°C). The test results are listed in the enclosure.

This test report is valid beginning with date of issue and ending by 04.08.2009, as far as there are no changes in the formula. After this time it can be extended for further 5 years if demanded.

Gelsenkirchen, 04.08.2004



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TEST RESULTS
„cold water test“

Product: KLINGERSIL®C-4500 (black)
Formula: rubber (submitted and checked)
Surface of the test pieces: migration test: 3200 cm² ; chlorine demand test: 18,4 cm²
Volume of test water: migration test: 3365 ml ; chlorine demand test: 3550 ml
Application: small gaskets (Category D2)
S/V-Ratio: 1 : 50
concentration of lead and zinc in the material:
content of lead: <0,0005 % (limid: 0,003 %)
content of zinc: 0,39 % (limid: 3 %)
monom. Acrylonitrile: <0,5 mg/kg (limid: 1 mg/kg)

Test / Parameter				Requirements for "small gaskets" (D2) 3 rd . extraction (7.-9. day)
	1.-3. day	4.-6. day	7.-9. day	
colour	colourless	colourless	colourless	n.s.e.
turbidity	clear	clear	clear	n.s.e.
tendency to foam formation	none	none	none	n.s.e.
TON (23°C)	1 *)	1 *)	1	< 2
TFN (23°C)	n.e.	n.e.	1	< 2
total organic carbon (TOC) mg/m ² x d	6,7	4,9	4,4	≤ 125
chlorine demand (free Cl ₂) mg/m ² x d	61	58	58	≤ 150
formaldehyde mg/m ² x d	<1	<1	<1	≤ 50
phenols mg/m ² x d	0,11	0,06	0,04	≤ 12,5
prim. aromatic amines mg/m ² x d	<0,06	<0,06	<0,06	≤ 0,25

*) temporary detection of TON

n.s.e. no significant effect
n.e. not examined
TON threshold odour number
TFN threshold flavour number

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(Priv.-Doz.Dr. Tuschewitzki)

Warranty/Damages for Default

The Association, its legal representatives, agents and employees are liable to the Principal and third parties which are protected by the Agreement, for all claims for default, irrespective of which legal reason, which arise under this Agreement or due to an offence (Art. 823 BGB [*German Civil Code*]) only in case of intent or gross negligence but not in case of ordinary negligence.

The personal liability of the legal representatives, agents and employees of the Association to the Principal shall be excluded except in case of intent or gross negligence.

The exemption from liability shall apply especially to claims for damages which arise from positive breach of the Agreement and from unlawful acts. The exemption from liability comprises any and all property damages, deficiency losses and consequential damages as well as indirect and direct financial damages of the Principal and the persons which are protected under this Agreement.

In case of Agreements with a consumer (consumer agreements) the above mentioned legal limitations shall not apply to the liability for damages arising from the injury of life, body or health which were caused by the negligent breach of obligations of the Association or an intended or negligent breach of obligations of a legal representative, agent or employee of the Association.

If individual parts of this exemption from liability or this limitation of liability are invalid, the validity of the clause shall not be affected.