

Approval Number: 1411521  
Test Report: MAT/LAB 653H



2<sup>nd</sup> December 2014

Desca AG  
Lerzenstrasse 14,  
CH-8953 Dietikon,  
Switzerland

Water Regulations Advisory Scheme Ltd.  
Unit 13,  
Willow Road,  
Pen y Fan Industrial Estate,  
Crumlin,  
Gwent,  
NP11 4EG

**WATER REGULATIONS ADVISORY SCHEME LTD. (WRAS)**  
**MATERIAL APPROVAL**

The material referred to in this letter is suitable for contact with wholesome water for domestic purposes having met the requirements of BS6920-1:2000 and/or 2014 'Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water'.

The reference relates solely to its effect on the quality of the water with which it may come into contact and does not signify the approval of its mechanical or physical properties for any use.

**HOSES & TUBING**

**5140**

Descaflex PWH-300 also known as Descaflex PWH C-300. Black coloured, single layer, extruded HDPE cable. For use with water up to 23°C.

**APPROVAL NUMBER: 1411521**

**APPROVAL HOLDER: DESCA AG**

The Scheme reserves the right to review approval.

Approval 1411521 is valid between November 2014 and November 2019

An entry, as above, will accordingly be included in the Water Fittings Directory on-line under the section headed, "Materials which have passed full tests of effect on water quality".

The Directory may be found at: [www.wras.co.uk/directory](http://www.wras.co.uk/directory)

Yours faithfully

A handwritten signature in black ink, appearing to read 'Jason Furnival'. The signature is fluid and cursive, with a large initial 'J' and 'F'.

Jason Furnival  
Approvals & Enquiries Manager  
Water Regulations Advisory Scheme

## **WRAS MATERIAL APPROVAL - MATERIALS WHICH HAVE PASSED FULL TESTS OF EFFECT ON WATER QUALITY**

The material referred to in this letter is suitable for contact with water for domestic purposes. **Approval of this material does not signify the approval of its mechanical or physical properties for any use.**

Manufacturers or applicants may only quote in their sales literature terms which are used in this letter, namely that; 'the material as listed, having passed the tests of effect on water quality, is suitable for use in contact with wholesome water'

This may be abbreviated to 'Water Regulations Advisory Scheme - Approved Material' or 'WRAS Approved Material'.

The scope of an Approval does not extend to rebranded materials unless otherwise agreed by the Scheme.

### **Use of the WRAS Approved Material Logo**

Approval holders may use the WRAS Approved Material logo and make reference to any approval issued by WRAS Ltd. in respect of a particular material or range of materials provided the approval is, and remains valid.

Approval holders are entitled to use the logo on the packing, promotional literature and point of sale advertising Approved Materials.

### **Modifications to existing Approvals**

It is a condition of WRAS Material Approval that NO changes or modifications to the Approved Material, be made without the Approval Holder first notifying WRAS Ltd. Full details of the proposed changes must be provided to the Scheme. Failure to comply with this condition will immediately invalidate a previously granted Approval.

### **Re-Approval**

WRAS will write to you 1 year before the approval expires asking whether you would like to renew it. Please complete the relevant section of the MA3 application form which will be included with the letter and return to WRAS (via e-mail or post).

Please note it is the responsibility of the Approval Holder to ensure the Approval remains valid. WRAS Ltd. accepts no liability for the delay in granting approval where this is caused by circumstances outside of the Scheme's control.

# PRÜFZEUGNIS

über die Untersuchung von "Kabel aus DESCAFLEX PWH-300 und DESCAFLEX PWH C-300, schwarz" gemäß der KTW-Leitlinie des Umweltbundesamtes (UBA)

Hersteller: DESCA AG, Dietikon, Schweiz,  
 Prod. st.: TecniKabel S.p.A., Volpiano (Mi), Italien  
 Art der Proben: PE-Xb Qualität  
 Bezeichnung der Proben: "Kabel aus DESCAFLEX PWH-300 und DESCAFLEX PWH C-300, schwarz"  
 Art der Prüfkörper: Originalprobekörper  
 Eingang der Proben: 30.09.2014  
 Probenehmer: Auftraggeber  
 TZW-Az.: KA 0323/14

## Untersuchungsergebnisse

1. Rezeptur: wurde unter KC 679/14 vorgelegt und überprüft
2. Migrationstest:

Kaltwasser 23°C	1. – 3. Tag	4. – 6. Tag	7. – 9. Tag	Richtwert für 3. Extraktion
Klarheit, Färbung, Geruch, Geschmack, Schaumbildung	n nb	n nb	n nb	nicht nennenswert beeinflusst
C-Abgabe [mg C/m²d]	1,2	0,8	1,0	≤ 12,5
4 Rezepturbestandteile, die der Geheimhaltung unterliegen	Richtwert eingehalten			Trinkwasser-SML-Werte nach BedarfsgegenständeV

Die untersuchten Proben "Kabel aus DESCAFLEX PWH-300 und DESCAFLEX PWH C-300, schwarz" für den Kontakt mit Trinkwasser entsprechen den Anforderungen der KTW-Leitlinie des Umweltbundesamtes (UBA) (Bundesgesundheitsblatt aktuelle Fassung) im Bereich Ausrüstungsgegenstände. DE

### Anmerkung:

Die Gültigkeit dieses Prüfzeugnisses richtet sich nach andernorts festgelegten Bestimmungen. Sie endet jedoch spätestens 5 Jahre nach Ausstellungsdatum.

Für eine Verlängerung gelten gesonderte Bestimmungen.

Karlsruhe, den 11.12.2014



Dr. J. Klinger / i.A. Dr.-Ing. R. Turkovic  
Leiter der Prüfstelle

Die Veröffentlichung des Prüfzeugnisses – vollständig oder in Auszügen – ist ohne ausdrückliche Genehmigung von seiten der Prüfstelle nicht gestattet

# PRÜFZEUGNIS

über die Prüfung nach DVGW-Arbeitsblatt W 270 (11/2007) „Vermehrung von Mikroorganismen auf Werkstoffen für den Trinkwasserbereich“

Hersteller: DESCA AG, Dietkon, Schweiz  
Art der Proben: Kabelummantelung, PE-HD-Qualität, schwarz  
Bezeichnung der Proben: DESCAFLEX PWH-300 und DESCAFLEX PWH C-300  
Eingang der Proben: 10.07.2014  
Probenehmer: Auftraggeber  
TZW-Az.: MO 200/14

Das vorgelegte Probenmaterial DESCAFLEX PWH-300 und DESCAFLEX PWH C-300 entspricht aus mikrobiologischer Sicht den Anforderungen des DVGW-Arbeitsblattes W 270 (11/2007).

Die Einzelergebnisse sind in einem gesonderten Prüfbericht zusammengefasst.

Die Gültigkeit dieses Prüfzeugnisses richtet sich nach andernorts festgelegten Bestimmungen. Sie endet jedoch spätestens 5 Jahre nach Ausstellungsdatum.

Das Prüfzeugnis ist nur solange gültig, wie keine Veränderungen in Zusammensetzung und Herstellungsprozess des Werkstoffes erfolgen.

Karlsruhe, den 24.02.2015



Dr. J. Klinger / i.A. Dr.-Ing. R. Turkovic  
Leiter der Prüfstelle

Die Veröffentlichung des Prüfzeugnisses – vollständig oder in Auszügen – ist ohne ausdrückliche Genehmigung von seiten der Prüfstelle nicht gestattet

**DECLARATION OF CONFORMITY**in accordance with  
DIN EN ISO/IEC 17050Date: 14 December 2016  
Phone: +41 44 306 6257  
Issuer: MRI**Declaration subject:**

Material description:

**EPDM 70.10-02** (EPDM 75.5/KW75F)**The material described above meets the requirements stipulated in the following guidelines/standards:**

Homologations: (Update acc. 25/05/2016 rev 36)

**WRAS** (BS 6920) for drinking water, cold and warm up to 85°C; it will expire on: May 2019**SAI GLOBAL** (AS/NZS 4020) for drinking water, cold and warm up to 85°C; it will expire on: 07/03/2019In compliance with **FDA** (177.2600-21) requisites for food. RP N° 588/98 of CERISIE lab**UBA** for drinking water, cold and warm up to 85°C; it will expire on 09/05/2021**DVGW-W270 E** (11/2007) for drinking water; it will expire on 25/04/2021**DVGW W534** for warm drinking water Type WA-WB N° DW-5253BQ0461. It will expire on 26/09/2018**NSF** (Standard 61) for drinking water, cold and warm up to 82°C; (Standard 51) for food till 100°C**ÖNORM B 5014-1** for drinking water, cold and warm up to 85°C. It will expire on 24/06/2018**KIWA** (BRL-K17504) for warm drinking water. **EN 681-1** Type WA-WB-WC-WDIn compliance with the requirements of: **D.M. 06/04/04 n° 174. BfR XXI – Category 4****3-A Sanitary Standard** N° 18-03 Class II **AS/NZS 4020:2005** Report ID 124337**USP class VI**, Chapter <87> (In Vitro) and Chapter <88> (In Vivo) - 121°C**ACS** (DGS/VS4 n° 99/217 dated 12/04/1999 and DGS/VS4 n° 2000/232 dated 27/04/2000. exp. 24.02.2019**2011/65/EU (RoHS)**EC-Regulation **1935/2004 article 3** and EC-Regulation **2023/2006**,free of Animal Derived Ingredients (**ADI**) resp. **TSE/BSE** related substances

free of Phthalates (DEHP), free of Bisphenol A (BPA)

**Additional information:**

Expiration date of this declaration of conformity is 31.12.2017

**Angst + Pfister Group Engineering**

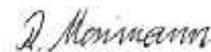
Zurich, 14 December 2016

(Place and date of issuance)

  
Y. Riedo

Senior Engineer

(Name and signature or equivalent authentication of authorized persons)



R. Mosimann

Engineering Data Administrator

25 January 2017, Bergen op Zoom, The Netherlands

**Subject: Test certificate according to KTW (Kunststoffe in Trinkwasser) guideline**

Dear Most Valued Customer

Thank you for using SABIC products.

Please find attached the German KTW (Kunststoffe in Trinkwasser) test certificate pursuant to the KTW guideline.

Any addition to this material is the sole responsibility of the downstream user.

SABIC has no control over final material composition nor over processing conditions. It is therefore the responsibility of the manufacturer that markets the final material or article to have these final materials and articles certified according to the KTW guideline.

Kindly note that this confirmation is only valid for the specific product shown up at the Test Certificate which is manufactured in Bergen op Zoom, The Netherlands.

Do note that the information above is current as on the date of this letter. The information provided in this letter is based upon information currently available to Seller. I trust the above information will be of use to you.

This letter supersedes all earlier communications on the same subject matter. If you have any further questions, or you require additional information on the above, please contact:

[webinquiries@sabic-ip.com](mailto:webinquiries@sabic-ip.com) (EU).

In the name of the manufacturer,

for SABIC

Bas van Sikkelerus

Product Stewardship

**Enclosure: Test Certificate**

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# Hygiene-Institut des Ruhrgebiets

Institut für Umwelthygiene und Toxikologie

Direktor: Prof. Dr. rer. nat. L. Dunemann

Träger: Verein zur Bekämpfung der Volkskrankheiten im Ruhrkohlengebiet e.V.



HYGIENE-INSTITUT · Postfach 10 12 55 · 45812 Gelsenkirchen / GERMANY

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Telefax +49 (0) 209 9242-212  
E-Mail a.bernoussi@hyg.de  
Internet www.hyg.de

Reference-No.: K-280214-17-Bs/st  
Contact person: Anasse Bernoussi (Eng.)  
Prolongation: K-204360-11-Bs

Gelsenkirchen, 19.01.2017

## TEST CERTIFICATE according to the KTW Guideline

Product: NORYL 731S-701-1977, NORYL 731S-801-1977, NORYL 731S-845-1977,  
NORYL 731S-960-1977

Test specimen: Discs ED 100 mm thickness 3 mm

The above mentioned product was tested according to the Guideline on the hygienic assessment of organic materials in contact with drinking water of the German Environment Agency. Pursuant to the test report-no.: K-204360-11-Bs dated 01.07.2011 and K-280214-17-Bs/st dated 19.01.2017 the product meets the requirements for the product group:

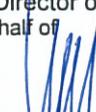
**Fittings for pipes with DN < 80 mm in contact with cold water (23°C) and hot water (85°C).**

All product groups for which the requirements are met are summarised on the back side.

The certificate is valid providing that the requirements, laid down in the Guideline regarding the testing of the microbial growth are fulfilled. This can be verified for the product f.e. with a valid test certificate according to the DVGW technical rule W 270.

This test certificate is valid beginning with the date of issue and is ending by 01.07.2021 as far as there are no changes in the formula.

The Director of the Hygiene-Institute  
on behalf of

  
Dr. rer. nat. Andreas Koch  
Head of the Dept. for water  
hygienic material testing



The assessment was based on the assumption that the used starting substances and monomers used to manufacture the product may completely known and no other substances are present in the product. The validity of this document expires in case of modifications in the composition of the product or the processing conditions. The results and evaluations refer to the groups of test items. This document may not be published without our written permission only complete and unchanged or duplicated.

Träger: Verein zur Bekämpfung der Volkskrankheiten im Ruhrkohlengebiet e.V., Vereinsregister: VR 519 Amtsgericht Gelsenkirchen, USt.-ID: DE125018356  
Vorstand: Prof. Dr. Werner Schlake (Vors.), Prof. Dr. Jürgen Kretschmann, Dr. Emanuel Grün, Volker Vohmann, Prof. Dr. Lothar Dunemann (geschäftsf. Vorstand)

The mentioned product meets the requirements according to the test report-no.: **K-204360-11-Bs** dated 01.07.2011 and **K-280214-17-Bs/st** dated 19.01.2017 for the following product group(s) and temperature(s), as far as technically suited.

Product group	cold water (23°C)	warm water (60°C)	hot water (85°C)
Pipes with DN < 80 mm (service and domestic pipes)			
Pipes with 80 mm ≤ DN < 300 mm (distribution pipes)			
Pipes with DN ≥ 300 mm (large distribution, mains)			
Fittings for pipes with DN < 80 mm	passed		passed
Fittings for pipes with 80 mm ≤ DN < 300 mm	passed		passed
Fittings for pipes with DN ≥ 300 mm	passed		passed
Seals for pipes with DN < 80 mm	passed		passed
Seals for pipes with 80 mm ≤ DN < 300 mm	passed		passed
Seals for pipes with DN ≥ 300 mm	passed		passed
Containers in the drinking water installation including repair systems			
Containers outside the drinking water installation including repair systems	passed		passed
Repair systems for containers in the drinking water installation with 1/100 of the surface area of the container	passed		passed
Repair systems for containers outside the drinking water installation with 1/100 of the surface area of the container	passed		passed
Small contact area components of materials for pipes with DN < 80 mm that are only installed in one place in the distribution system (e.g. plain bearing of a pump)	passed		passed
Small contact area components of materials for pipes with 80 mm ≤ DN < 300 mm, that are only installed in one place in the distribution system (e.g. plain bearing of a pump)	passed		passed
Small contact area components of materials for pipes with DN ≥ 300 mm, that are only installed in one place in the distribution system (e.g. plain bearing of a pump)	passed		passed

If further products or components with the same formulation are produced with the same process at one production site and differ only in geometry, this test certificate applies to further parts of this product range.



13 January 2017, Bergen op Zoom, The Netherlands

**Subject: Test certificate according to DVGW (Deutsche Vereinigung des Gas- und Wasserfaches) technical standard W270**

Dear Most Valued Customer

Thank you for using SABIC products.

Please find attached the German Test Certificate Enhancement of Microbial Growth on Materials to Come into Contact with Drinking water pursuant to DVGW Technical Standard W 270.

Any addition to this material is the sole responsibility of the downstream user.

SABIC has no control over final material composition nor over processing conditions. It is therefore the responsibility of the downstream user to check if further follow-up tests are required.

Kindly note that this confirmation is only valid for the specific product shown up at the Test Certificate which is manufactured in Bergen op Zoom, The Netherlands.

Do note that the information above is current as on the date of this letter. The information provided in this letter is based upon information currently available to Seller. I trust the above information will be of use to you.

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[webinquiries@sabic-ip.com](mailto:webinquiries@sabic-ip.com) (EU).

In the name of the manufacturer,  
for SABIC

Bas van Sikkelerus

Specialist, Regulatory Affairs, Corporate Product Stewardship

Enclosure: Test Certificate

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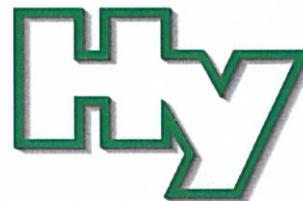
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# Hygiene-Institut des Ruhrgebiets

Institut für Umwelthygiene und Toxikologie

Direktor: Prof. Dr. rer. nat. L. Dunemann

Träger: Verein zur Bekämpfung der Volkskrankheiten im Ruhrkohlengebiet e.V.



Hygiene-Institut · Postfach 10 12 55 · 45812 Gelsenkirchen

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E-Mail c.schell@hyg.de  
Internet www.hyg.de

Reference: W-279046e-16-SI/Krü  
Before: W-230071e-13-SI  
Contact person: Mrs. Dr. Ch. Schell

Gelsenkirchen, 15.12.2016

## TEST CERTIFICATE (Extension of Test Certificate W-230071e-13-SI)

**Enhancement of Microbial Growth on Materials to come into contact with Drinking water  
Test pursuant to DVGW Technical Standard W 270, November 2007**

**Client:** SABIC Innovative Plastics BV  
Plasticslaan 1  
4612 PX BERGEN OP ZOOM  
THE NETHERLANDS

**Test material:** Noryl 731S-701-1977

**Test method:** Material test

According to test report **W-171688e-08-SI** of **17.12.2008**, the material **Noryl 731S-701-1977** is conform to the requirements for the use in the area of drinking water systems pursuant to DVGW Technical Standard W 270. Details regarding testing procedure and test results are itemized in the test report.

This test certificate also covers the materials **Noryl 731S-801-1977**, **Noryl 731S-845-1977** and **Noryl 731S-960-1977** (all in material color).

This test certificate is valid from the date of issue and, given that the conditions and requirements remain unaltered, expires on **14.06.2018**.

The Director of the Institute

p.p.

  
Dr. Ch. Schell  
Head of Laboratory  
Department of Water Hygiene and Environmental Microbiology

Die Ergebnisse unserer Prüfungen und die Bewertungen gelten für die untersuchten Prüfgegenstände und die zum Zeitpunkt der Prüfung geltenden gesetzlichen Regelungen. Die Gültigkeit des Dokuments erlischt, wenn Veränderungen der Zusammensetzung des Werkstoffs oder der Verarbeitungsbedingungen erfolgen. Dieses Dokument darf ohne unsere ausdrückliche schriftliche Genehmigung nur in vollständiger und unveränderter Form veröffentlicht oder vervielfältigt werden.

Dieses Dokument stellt keine DVGW-Zertifizierung dar.

Träger: Verein zur Bekämpfung der Volkskrankheiten im Ruhrkohlengebiet e.V., Vereinsregister: **VR 519** Amtsgericht Gelsenkirchen, USt.-ID: **DE125018356**  
Vorstand: Prof. Dr. Werner Schlake (Vors.), Prof. Dr. Jürgen Kretschmann, Dr. Emanuel Grün, Volker Vohmann, Prof. Dr. Lothar Dunemann (geschäftsführ. Vorstand)

23 January 2017, Bergen op Zoom, The Netherlands

**Subject: Water Regulations Advisory Scheme Material approval**

Dear Most Valued Customer

Thank you for using SABIC products.

Please find attached the WRAS (Water Regulations Advisory Scheme) approval pursuant to the British standard BS 6920.

Any addition to this material is the sole responsibility of the downstream user.

SABIC has no control over final material composition nor over processing conditions. It is therefore the responsibility of the downstream user to check if further follow-up tests are required.

Kindly note that this confirmation is only valid for the specific product shown up at the Test Certificate which is manufactured in Bergen op Zoom, The Netherlands.

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[webinquiries@sabic-ip.com](mailto:webinquiries@sabic-ip.com) (EU).

In the name of the manufacturer,

for SABIC

Bas van Sikkelerus

Specialist, Regulatory Affairs, Corporate Product Stewardship

SABIC

Plasticslaan 1, 4600 AC Bergen op Zoom, The Netherlands

Enclosure: Test Certificate

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Approval Number: 1612542  
Test Report: MA5821/Y 1-3



20<sup>th</sup> January 2017

SABIC Innovative Plastics BV  
P. O Box 117,  
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**WATER REGULATIONS ADVISORY SCHEME LTD. (WRAS)**  
**MATERIAL APPROVAL**

The material referred to in this letter is suitable for contact with wholesome water for domestic purposes having met the requirements of BS6920-1:2000 and/or 2014 'Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water'.

The reference relates solely to its effect on the quality of the water with which it may come into contact and does not signify the approval of its mechanical or physical properties for any use.

**POLYPHENYLENEOXIDE (PPO) - MATERIAL ONLY.**

**5250**

NORYL 731S-701-1977 (black coloured), 731S-801-1977 (beige), 731S-845 (beige) & 731S-960-1977 (grey). Injection moulded PPO materials. For use with water up to 85°C.

**APPROVAL NUMBER: 1612542**

**APPROVAL HOLDER: SABIC INNOVATIVE PLASTICS BV**

The Scheme reserves the right to review approval.

Approval 1612542 is valid between December 2016 and December 2021

An entry, as above, will accordingly be included in the Water Fittings Directory on-line under the section headed, "Materials which have passed full tests of effect on water quality".

The Directory may be found at: [www.wras.co.uk/directory](http://www.wras.co.uk/directory)

Yours faithfully

A handwritten signature in black ink, appearing to read 'Jason Furnival', written in a cursive style.

Jason Furnival  
Approvals & Enquiries Manager  
Water Regulations Advisory Scheme

## **WRAS MATERIAL APPROVAL - MATERIALS WHICH HAVE PASSED FULL TESTS OF EFFECT ON WATER QUALITY**

The material referred to in this letter is suitable for contact with water for domestic purposes. **Approval of this material does not signify the approval of its mechanical or physical properties for any use.**

Manufacturers or applicants may only quote in their sales literature terms which are used in this letter, namely that; 'the material as listed, having passed the tests of effect on water quality, is suitable for use in contact with wholesome water'

This may be abbreviated to 'Water Regulations Advisory Scheme - Approved Material' or 'WRAS Approved Material'.

The scope of an Approval does not extend to rebranded materials unless otherwise agreed by the Scheme.

### **Use of the WRAS Approved Material Logo**

Approval holders may use the WRAS Approved Material logo and make reference to any approval issued by WRAS Ltd. in respect of a particular material or range of materials provided the approval is, and remains valid.

Approval holders are entitled to use the logo on the packing, promotional literature and point of sale advertising Approved Materials.

### **Modifications to existing Approvals**

It is a condition of WRAS Material Approval that NO changes or modifications to the Approved Material, be made without the Approval Holder first notifying WRAS Ltd. Full details of the proposed changes must be provided to the Scheme. Failure to comply with this condition will immediately invalidate a previously granted Approval.

### **Re-Approval**

WRAS will write to you 1 year before the approval expires asking whether you would like to renew it. Please complete the relevant section of the MA3 application form which will be included with the letter and return to WRAS (via e-mail or post).

Please note it is the responsibility of the Approval Holder to ensure the Approval remains valid. WRAS Ltd. accepts no liability for the delay in granting approval where this is caused by circumstances outside of the Scheme's control.