

**Date: 17/03/2026**

**Ref: 2026/002**

**Subject: Use of detergent in the Accelerated Notched Pipe Test (ANPT) according to ISO 13479**

**Update on "PE100+ Association" position letter on Accelerated Notched Pipe Test (ANPT)**

To whomsoever it may concern

Notched Pipe Test (NPT) according to ISO 13479-2009 has been used to assess the slow crack growth (SCG) resistance on pipes for pressure applications since many years. With the introduction of PE 100-RC materials in EN 1555, EN 12201 and ISO 4437 series (ISO 4427 series being still under revision), the option to use a specific surfactant solution was added to the latest version of NPT standard, ISO 13479-2022, to accelerate the test and reduce the failure times. This testing is commonly referred to as Accelerated Notched Pipe Test (ANPT).

Following the well-established experience of the industry, nonyl-phenol ethoxylate (NPE) based surfactant with CAS number 9016-45-9 (with a trade name of Arkopal® N100) was defined in ANPT with a concentration of 2 % (mass fraction) aqueous solution in contact with the outside pipe surface to assess SCG resistance of PE 100-RC materials and pipes.

However, NPE based surfactants (including Arkopal N100) were included in Annex XIV of REACH regulation (EC) N° 1907/2006 as endocrine disruptors with a sunset date of 04/01/2021. This means that NPE based surfactants are now banned in Europe for commercial or industrial use due to their acute environmental toxicity.

Although there is one exemption for scientific research, laboratory chemicals and development activities, it appeared that it is not practical to source the surfactant in Europe and Middle East. As a consequence, it is almost impossible to consider Arkopal N100 anymore, specifically for the ANPT test.

Activities are ongoing under the umbrella of PE100+ Association to study and select an alternative detergent. Lauramine oxide [CAS number 308062-28-4], commercially available as Dehyton® PL, being the candidate under assessment.

PE100+ Association has organized a Round Robin (RR) test of ANPT using Dehyton® PL and completed it in 2025. Following the successful round robin test, the association has started the work of identifying threshold values for PE100-RC materials. The conclusion of this activity and reaching to a set of recommendations are expected to take place by end of 2026.

In the interim and until a conclusion is reached, the **PE100+ Association recommends the following regarding the certification and homologation of PE 100-RC materials and pipes:**

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***PE100+ association is committed to follow EU anti-competition law***

For raw material suppliers for national and/or international certifications:

- to accept existing ANPT test reports (obtained in Arkopal N100) until the end of 2026,
- as alternative to consider existing NPT test reports (1 year testing at standard conditions in water) valid until end of 2026 for existing PE 100-RC materials, in case no recipe change took place (also applicable to new materials that cannot be tested in Arkopal N100 solution anymore).

For pipe producers for national and/or international certifications:

- to accept existing ANPT test reports (obtained in Arkopal N100) until the end of 2026,
- to consider/accept the "Strain Hardening Test (SHT)" for pipe group dimension 2 instead of running the ANPT.

Necessary feedback will be provided to relevant standardisation working groups (EN 1555, EN 12201, ISO 4437, ISO 4427, EN ISO 15494) for a proposal of test conditions & requirements for ANPT using Dehyton® PL solution (stress, time, temperature, concentration) as soon as PE100+ Association Technical Committee agrees on the outcome of currently ongoing studies.

Yours faithfully,

Dr. Suleyman Deveci

A handwritten signature in blue ink, appearing to read "Suleyman Deveci", with a large, stylized flourish above the name.

Chairman of The Technical Committee  
PE100+ Association

Andrew Wedgner

A handwritten signature in blue ink, appearing to read "A. Wedgner", with a large, stylized flourish above the name.

President and Chairman of the Board  
PE100+ Association

*Disclaimer: Please note that this is only a recommendation, based on the current discussions of the PE100+ Technical Committee.*

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