Pascalor
ENGINEERED FOR EXTREMES

Drinking-water and food-contact approvals for rubber seals

Technical briefing, with an approvals tracker

DOCUMENT	VERSION	DATE	TYPE
PP-TB-003	0.1	2026-10-23	Technical briefing

Status. Technical briefing prepared from public sources. Contains no Pascalor test data. No Pascalor compound holds any approval named here. Sources were read on 23 October 2026. Check every figure against the current edition of the standard before you rely on it.

1. Purpose and status of this document

Seal makers who sell into water, food, beverage and pharmaceutical markets are asked for approvals by name: NSF 61, WRAS, KTW, FDA. This briefing explains what those names mean, how an application usually works, and what a compounder has to do. It is based on public sources named in section 9 and on general knowledge that we flag as such. It is not legal or regulatory advice. **It contains no test data, and at the date of this document no Pascalor compound holds any approval named here.** Approval rules change. Check each scheme's current documents before relying on this briefing.

2. Summary

- Approvals are granted to a specific formulation, made by a specific manufacturer at a specific facility, for a defined use. A name on a seal does not carry the approval.
- Different regions run different schemes. Germany, the UK, the US, Italy and Austria each have their own drinking-water scheme, and several include lists of permitted starting materials.
- Food-contact rules (FDA, EU) work differently from drinking-water listings. They often rely on positive lists of ingredients plus extraction limits.
- A compounder supports the application by supplying a full ingredient list to the certifier under confidentiality, controlling the recipe, and keeping the production site and lot records that the certifier audits.
- Some lists mix water and gas standards. Read the scope of each one.

3. The schemes, in plain terms

SCHEME	REGION	WHAT IT IS ABOUT, AS DESCRIBED BY THE SOURCES WE READ	NOTES
NSF/ANSI 61	USA (also used in Canada as NSF/ANSI/CAN 61)	Drinking water system components. Sets limits on contaminants and impurities that may leach from components into drinking water.	A supplier source says NSF may approve a seal as a component for a particular application, or grant blanket certification to a compound for all applicable applications.

SCHEME	REGION	WHAT IT IS ABOUT, AS DESCRIBED BY THE SOURCES WE READ	NOTES
NSF/ANSI 372	USA	Lead content of drinking water system components.	From general knowledge. Not covered by the sources we read. Verify.
NSF/ANSI 51	USA	Food equipment materials.	Named in the supplier source.
NSF/ANSI 50	USA	Circulation system components for swimming pools and spas.	Named in the supplier source.
WRAS (BS 6920)	UK	Water Regulations Advisory Scheme. One source says it includes tests for odour, flavour and taste of water, leachable chemicals and microbial growth.	
UBA KTW	Germany	Issued by the Umweltbundesamt. One source says it includes a list of approved starting elastomers, test methods and limits.	
DVGW W270	Germany	Tests for microbial growth enhancement of non-metallic materials in contact with drinking water.	
DM-174	Italy	Ministerial Decree 174. One source calls it a white list of elastomer materials for base compounding, with migration and immersion tests.	
ÖNORM B 5014-1	Austria	Testing regimes and requirements for products in contact with drinking water, and a list of pre-approved materials.	
FDA 21 CFR 177.2600	USA	Rubber articles intended for repeated use in contact with food. One source says its positive lists describe allowable substances and limits, with extraction tests.	The source does not say it is specific to drinking water.
EU Regulation 1935/2004	EU	General framework for materials in contact with food.	From general knowledge. Verify.
BfR Recommendation XXI	Germany	German recommendation on commodities based on natural and synthetic rubber.	From general knowledge. Verify.
EN 681-1	Europe	Elastomeric seals for water and drainage applications.	From general knowledge. Not covered by the sources we read.

Watch the scope. The supplier page we read lists EN 549 and EN 14241-1 beside drinking-water approvals. It describes them as covering gas appliances, gas equipment and flue systems. They are not

drinking-water approvals. Another entry on the same page, ACS, is listed without a country or description. When a datasheet lists approvals, find out what each one covers.

4. Who holds an approval

Approval attaches to three things together: the formulation (the exact list of ingredients), the manufacturer, and the facility. The supplier source we read says NSF audits the compound maker's facility annually. If you change the recipe, the supplier of a major ingredient, or the production site, you should assume the approval does not carry over until the certifier says it does.

A compound maker who sells to a seal maker is often the party that holds the listing. A seal maker who buys approved compound still has to control the way it moulds, post-cures and handles parts. The final device manufacturer usually applies for approval of the finished component.

5. How an application usually runs (NSF/ANSI 61, as described by one supplier)

1. The device manufacturer asks the certifier for approval and receives a two-part application form.
2. The device manufacturer completes the first part, which defines the application, including the exposed contact area of the seal.
3. The compound maker completes the second part. It lists the compound's ingredients and, where relevant, the section of the US Code of Federal Regulations that applies.
4. The compound maker sends the second part directly to the certifier.
5. The certifier reports results to the device manufacturer.

Other schemes differ in the steps but not in the principle: a formulation disclosed to the certifier, a defined use, laboratory testing, audit, and a listing that names the formulation.

6. What a compounder must have ready

- A controlled recipe with revision history, and the ability to freeze it.
- Full ingredient identities (CAS numbers where applicable), with suppliers' declarations.
- A confidentiality agreement with the certifier. Ingredient lists are not shared with customers.
- A production site with documented process control.
- Batch records that link every lot to a recipe revision.
- Agreement with the customer on the intended use, temperature, contact area and exposure time.
- A realistic lead time. Testing, audit and listing take time, and the sources we read give no schedule. Ask the certifier.

7. Design choices that help or hurt

These are general engineering points, not scheme requirements.

- **Peroxide and ingredient choices matter.** Some ingredients are excluded from positive lists or limited in migration. Choose from the permitted ingredients from the start rather than modifying a finished recipe.
- **Post-cure and volatile content.** A well-done post-cure removes volatiles that would otherwise migrate. Do not assume it is enough.
- **Carbon black grade and colour.** Many schemes restrict fillers and pigments. Check every one.
- **Not all polymers are on all lists.** Some schemes list approved base elastomers. If your polymer is not on the list, a compound will not qualify however clean the recipe.

8. Approvals tracker (template)

COMPOUND / REVISION	SCHEME	SCOPE (WATER, FOOD, POOL)	CERTIFIER	LISTING / CERTIFICATE NO.	VALID FOR (LOTS, SITE)	EXPIRY	CHANGE TRIGGERS

9. Sources and verification

SOURCE	USED FOR	STATUS
Precision Associates, clarifying the use of rubber seals in water	NSF/ANSI 61, 51 and 50; application steps; annual audit	Supplier summary
Trelleborg Sealing Solutions, approvals and certifications	WRAS, KTW, DVGW W270, DM-174, ÖNORM B 5014-1, FDA 177.2600 descriptions; scope warning	Supplier summary
NSF/ANSI 61, 372, 51, 50; BS 6920; KTW; W270; DM-174; ÖNORM B 5014-1; 21 CFR 177.2600; EU 1935/2004; BfR XXI; EN 681-1	Primary requirements	**Read the current text of each scheme before use.** Items marked "general knowledge" above were not drawn from the sources we read

Sources were read on 23 October 2026. Web pages change.