

BecFluid®

Dielectric cooling and insulating fluid

Water hazard classification

BecFluid® 9902 has been classified as non-water hazardous by the German Federal Department of the Environment.

Background

Concern about the contamination of potable and groundwater supplies by industrial chemicals led to the setting up in 1976 of a specialist committee to advise the German Federal Ministry of the Interior on the handling, transport, storage and packaging of water endangering materials. The committee's task was to define the term 'water endangering materials' and to develop a procedure for the classification of such materials.

The committee presented its final report in September 1979 proposing a scheme which classifies substances according to their water-endangering behaviour on the basis of the results of biological and ecotoxicological tests.

A preliminary assessment of the probable hazard classification of a substance is carried out by its manufacturer who may then apply to a special commission of the German Federal Department of the Environment to review the test data and validate the material as an 'assessed water endangering material'.

The commission maintains a register of validated materials.

The classification procedure has now been adopted by the German Chemicals Industry Association as a safety concept to assess the safety of substances used in fire

protection, water cooling systems and waste water treatment plants.

Water hazard classification

Materials are especially water endangering if they or their water-reaction products are capable of changing the composition/nature of water so that:

- a) The health of man and his environment are threatened or adversely affected.
- b) The present or future local use of water is affected or impaired to a degree above that acceptable for all users.

Biological testing

The classification of a material is based on the results of the following four toxicological tests:

- 1) Acute oral mammalian toxicity
- 2) Acute bacterial toxicity
- 3) Acute fish toxicity
- 4) Biodegradability

Results of tests 1) to 3) are used for an initial determination which may then be adjusted according to the result of test 4).

If a material is readily biodegraded a lower hazard class may be assigned. Conversely, where the material persists in the environment it will be reclassified to a higher hazard class.

The tests should be carried out by the methods laid down, under conditions of good laboratory practice (GLP). These methods are based on OECD, ISO and DIN guidelines, which are being harmonised so that they are equally applicable in all EU countries.

BecFluid classification

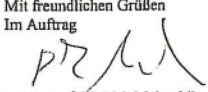
Test results for Esters were submitted for validation in 1992 by BASF Lacke + Farbe, the original licensee for the product in Germany. The classification non-water hazardous was confirmed in writing by the German Federal Department of the Environment on 13th Jan 1993 and re-confirmed to the present licensee ELANTAS Beck GmbH (formerly Beck Electrical Insulation GmbH) in March 2002 and January 2007. A facsimile copy of the letter of confirmation is shown overleaf.

The non-water hazardous validation puts BecFluid 9902 in a class of its own in comparison with other types of transformer fluid. The product can be confidently used in transformers in areas where contamination of potable and ground water supplies is of concern.

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<p>Geschäftsstelle der Kommission Bewertung wassergefährdender Stoffe im</p>	<p>Umwelt Bundes Amt Für Mensch und Umwelt</p> <p><i>EINGEGANGEN 02. Jan. 2007 Erl.</i></p>
<p>Umweltbundesamt • Postfach 1406 • 06813 Dessau</p> <p>Beck Electrical Insulation GmbH Herr Dr. Rost Großmannstraße 105 20539 Hamburg</p>	<p>Datum: Berlin, 22.12.2006</p> <p>Bearbeiter/in: Herr Dipl. Ing. FH Maletzki</p> <p>Tel.-Durchwahl: 030 / 8903-4167</p> <p>Telefax: 030 / 8903-4233</p> <p>E-mail: dirk.maletzki@uba.de</p> <p>Geschäftszeichen: IV2.6 BWS12286-1 (Bitte stets angeben!)</p>
<p>Bewertung wassergefährdender Stoffe:</p> <p>Pentaerythrittricarbonsäure(C5-C18)ester, Carbonsäurerest linear und einfach methylverzweigt, mittlere C-Zahl ¹⁸</p> <p>Kennnummern: 770</p> <p>Ihr Schreiben vom 11.12.2006</p> <p>Sehr geehrter Herr Dr. Rost,</p> <p>entsprechend Ihrem Schreiben vom 11.12.2006 wurde der Stoff mit der CAS-Nr. 67762-53-2 als Komponente zur Kenn-Nr. 770 unter dem Stoffnamen „Fettsäuren, C5-9-, Tetraester mit Pentaerythritol“ aufgenommen.</p> <p>Wir machen darauf aufmerksam, dass Sie verpflichtet sind, neue Erkenntnisse, die zu einer Änderung der WGK-Einstufung führen, der Auskunft- und Dokumentationsstelle wassergefährdende Stoffe umgehend mitzuteilen.</p> <p>Die Veröffentlichung der Einstufungen erfolgt im Internet unter der Adresse http://www.umweltbundesamt.de/wgk.htm.</p> <p>Mit freundlichen Grüßen Im Auftrag</p> <p> (Dipl. Ing. FH Dirk Maletzki)</p>	
<p><small>¹⁸ Es können auch andere alkylverzweigte Carbonsäuren als Reste enthalten sein und es sind kürzere mittlere Kettenlängen zulässig, sofern in einem standardisierten Test die leichte biologische Abbaubarkeit des Produkts nachgewiesen ist und die Löslichkeit in Wasser 10 mg/l nicht übersteigt. Entsprechende Produkte sind unter Vorlage von Angaben zur Stoffidentität und zur biologischen Abbaubarkeit bei der Dokumentations- und Auskunftsstelle zu registrieren und werden von dieser veröffentlicht.</small></p>	
<p>Dienstgebäude Versuchsfeld Marienfelde Schleichauweg 58, 12307 Berlin Tel.: 030 / 8903-0 Fax: 030 / 8903-4233 Internet: http://www.umweltbundesamt.de/wgk.htm E-Mail: wgk@uba.de</p>	<p>Verkehrsverbindungen: S-Bahn: Linie 2, Bahnhof Schleichauweg Bus: Linien X83, 376, Haltestelle Poleigrund ca. 15 - 20 min Fußweg</p>