EIDG. GEFAHRGUTINSPEKTORAT (EGI)
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The Federal Inspectorate of Dangerous Goods (EGI) as the Swiss competent authority according to the Regulations for Transport of Dangerous goods by Road SDR (741.621) and by Rail RSD (SR 742.401.6) imparts the following design type approval:

Approval CH/EGI-4204272

of the packaging design type for the transport of dangerous goods,
1. issue dated December 01, 2005

Applicant	Fischer Söhne AG Luzernstrasse 105 CH – 5630 Muri
Holder of the approval	Fischer Söhne AG CH – 5630 Muri
Your Order Our Reference	Email dated November 25, 2005, ref. G. Fischlin EQP 4204272
Object	Conical can with a screw cap closure, made of HDPE, code1H2, nominal capacity 1 litre, intended for liquid products
Manufacturer	Fischer Söhne AG, CH – 5630 Muri

1. Legal base and transport regulations

ADR	Europäisches Übereinkommen über die internationale Beförderung gefährlicher Güter auf der Strasse
SDR	Verordnung über die Beförderung gefährlicher Güter auf der Strasse
RID	Ordnung für die internationale Eisenbahnbeförderung gefährlicher Güter
RSD	Verordnung für die schweizerische Eisenbahnbeförderung gefährlicher Güter
ICAO-TI	International Civil Aviation Organisation: Technical Instruction for the safe transport of dangerous goods by air
IATA-DGR	International Air Transport Association: Dangerous Goods Regulations
IMDG-Code	International Maritime Dangerous Goods Code

2. Performed tests

2.1 Drop test at –18°C

The drop test was performed in all required drop orientations after a storage with following standard liquids:

	Drop height [m]	Gross weight [kg]
a) water	0.8	1.51
b) wetting solution	---	-----
c) acetic acid	---	-----
d) n-butyl acetate/ n-butyl acetate-saturated wetting solution	---	----
e) mixture of hydrocarbons	---	-----
f) nitric acid 55%	---	----

2.2 Stacking test at +40°C

The stacking test was performed after a storage with following standard liquids:

	Stacking load [kN]	Test time [d]	Stacking load corresponds to a density of [kg/litre]
a) water	0.48	28	1.2
b) wetting solution	----	--	---
c) acetic acid	----	--	---
d) n-butyl acetate/ n-butyl acetate-saturated wetting solution	----	--	---
e) mixture of hydrocarbons	----	--	---
f) nitric acid 55%	----	--	---

2.3 Leakproofness test (with air)

The leakproofness test was performed after a storage with following standard liquids:

	Test pressure (gauge) [kPa]	Test time [min]
a) water	20	5
b) wetting solution	--	--
c) acetic acid	--	--
d) n-butyl acetate/ n-butyl acetate-saturated wetting solution	--	--
e) mixture of hydrocarbons	--	--
f) nitric acid 55%	--	--

2.4 Internal pressure test (hydraulic)

The internal pressure test was performed after a storage with following standard liquids:

	Test pressure (gauge) [kPa]	Test time [min]
a) water	20	30
b) wetting solution	---	--
c) acetic acid	---	--
d) n-butyl acetate/ n-butyl acetate-saturated wetting solution	---	--
e) mixture of hydrocarbons	---	--
f) nitric acid 55%	---	--

2.5 Permeability test with mixture of hydrocarbons (white spirit)

The permeability test was not performed.

3. Description of the design type

3.1 Type

Kind of packaging	1H2
Designation by manufacturer	Conical can with a screw cap closure for liquid products, nominal capacity 1 litre

3.2 Dimensions

Nominal capacity [l]	1
Dimensions (can without closure) [mm]	∅142,1 / ∅132 x 102,5
Brimful capacity [l]	1.33
Wall thickness [mm]	≥ 0.9

3.3 Material type / manufacturing process

Can	HDPE Borealis Bostar MB 7541, black
Manufacturing process	blow-moulded
Screw cap	HDPE Borealis Bostar MB 7541, black
Manufacturing process	injection-moulded
Gasket	formable sealing lip on the upper edge of the can

3.4 Closures

Screw cap closure	with a sealing groove for sealing lip of the can and fitted with tamper evident ring
Tara mass [g]	48 ± 2
Torque [Nm]	30

3.5 Tare and max. gross mass

Tare mass of can [g]	84 ± 2
Tare mass of can with screw cap closure [g]	approx. 132
Max. gross mass [kg]	1.6

3.6 Documents to consider

- Manufacturer drawings No. 6148.1 D, sheet 1/2 and No. 6148.1 D, sheet 2/2, dated 06.08.2004
- Test report No. 2005.24.084, dated 14.10.2005 of the Ciba Specialty Chemicals Inc., CH-4002 Basel.

This test report supplements the present approval.

4. Scope of application

4.1 Contents and packing group

The packagings may be used for liquid goods of the packing group III of a density and a vapour pressure according to the statements in paragraphs 4.4, 4.5 and 4.6.

4.2 Compatibility

The packagings may be used only for those dangerous goods, for which the compatibility with the packaging material, including closures, is guaranteed evidently.

4.3 Standard liquids according to the transport regulations RID/ADR, paragr. 6.1.6

According to the test report(s) mentioned in paragraph 3.6, the chemical compatibility of the plastics materials indicated in paragraphs 3.3 and 3.4 was proved by using the following standard liquids: **water**.

4.4 Goods regarded equivalent with the standard liquids

The chemical compatibility of the plastics materials mentioned in paragraph 3.3 is also guaranteed with goods, which can be regarded equivalent with the standard liquids according to the transport regulations RID/ADR, paragraph 4.1.1.19. The packing group, the density and the vapour pressure at 50° resp. 55°C of the equivalent goods shall not exceed the following values:

	max. density [kg/l]	packing groups	vapour pressure lower than [kPa] at 50°C / [kPa] at 55°C	
a) water	1.2	III	68	80
b) wetting solution	---	---	---	---
c) acetic acid	---	---	---	---
d) white spirit	---	---	---	---
e) n-butyl acetate	---	---	---	---
f) nitric acid 55%	---	---	---	---

4.5 Chemical compatibility based on a storage of original goods in the packagings

Based on the results of the design-type tests carried out after a storage of original goods in the packagings according to the transport regulations RID/ADR, paragraph 6.1.5.2.5, the chemical compatibility with the following goods is quaranteed: no approval.

4.6 Chemical compatibility based on laboratory tests

Based on the results of the laboratory tests according to the transport regulations RID and ADR, paragraph 6.1.5.2.7, the chemical compatibility with the following goods is quaranteed: no approval.

5. Further requirements / Conditions

5.1 Conformity with test samples

The design type of packagings produced in series shall conform totally with the approved type, tested according to the report(s) mentioned under paragraph 3.6.

5.2 Permissible use of packagings

Packagings produced in accordance with the approved design and marked accordingly to paragraph 6 may be used for dangerous goods, if these packagings are allowed for these goods in regulations/directives of the legal base and transport regulations as named under paragraph 1.

5.3 Limitations

The following maximum values for the packaging resp. for the content shall not be exceeded: see paragraphs 4.4 and 4.5.

5.5 Series production of packagings

The production of packagings in series shall follow in accordance with a quality assurance programme accepted by EGI. The observance of the quality assurance programme will be inspected by EGI or by an expert admitted by EGI.

5.6 Conditions / Use of other packaging components

The applicant shall guarantee evidently, that all conditions concerning the use of the packagings are known to the user/packer. In case other packaging components are used, than those mentioned in this approval, the approval could become unvalid.

6. Marking of the packagings

The marking shown below must be affixed to the packaging:

UN 1H2 / Z / 20 / month and year of manufacture*) / CH / EGI-4204272 / FS

*) to be substituted by last two digits of the month and year of the manufacturing; the month of the manufacturing can be put on an other place of the packaging as the clock-face symbol

Requirements of the transport regulations RID, ADR and IMDG-Code, paragraph 6.1.3 and ICAO-TI, part 6, chapter 2, with reference to marking and height of the letters shall be respected.

7. Approval

Based on the results of the design type tests, above described packagings are approved for the transport of dangerous goods. The design type tests were carried out according to the requirements given by the legal base and the transport regulations listed in the paragraph 1 of this approval, valid at the time this approval was issued. Provided, that the packagings were manufactured according to a quality assurance system which complies with the transport regulations RID/ADR, paragraph 6.1.1.4 and IMDG-Code, paragraph 6.1.1.3, this approval is valid for unlimited time. The approval may be revocated at any time. Changes of the legal base and of the transport regulations have to be taken into account.

Wallisellen, December 01, 2005

SVTI / ASIT
Federal Inspectorate of Dangerous Goods (EGI)

Dr. Alexander Filip