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Swiss TS Technical Services AG as a Conformity Assessment Body according to art. 15 of the "Verordnung über das Inverkehrbringen und die Marktüberwachung von Gefahrgutumschliessungen" (SR 930.111.4) grants the following design type approval:

Approval SwissTS 4204646

of the packaging design type for the transport of dangerous goods,
1. issue
This approval is based on the 2. issue of the approval EGI 42044646 dated 06.11.2013

Applicant	Birchmeier Sprühtechnik AG Im Stetterfeld 1 CH – 5608 Stetten AG
Holder of the approval	Birchmeier Sprühtechnik AG CH – 5608 Stetten AG
Your order Your reference Our reference	dated 15.02.2017 Test report 160313 SM 248606 / HOS
Object	Jerrican made of HDPE, 6 litres capacity, with a screw cap closure, for liquid products • Article Rapidon
Manufacturer	Birchmeier Sprühtechnik AG CH – 5608 Stetten AG

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 Regulation
IMDG-Code	International Maritime Dangerous Goods Code.
GGUV	Verordnung über das Inverkehrbringen und die Marktüberwachung von Gefahrgutumschliessungen

2. Performed tests

2.1 Drop test at -18°C

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

	drop height [m]
a) water	-
b) wetting solution	-
c) acetic acid	-
d) n-butylacetate / with n-butyl-acetate saturated wetting solution	-
e) mixture of hydrocarbons	1,2
f) nitric acid 55%	-

2.2 Stacking test at +40°C

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

	stacking load [kN]	test time [d]	stacking load corresponds to a density of [kg / l]
a) water	-	-	-
b) wetting solution	-	-	-
c) acetic acid	-	-	-
d) n-butylacetate / with n-butyl-acetate saturated wetting solution	-	-	-
e) mixture of hydrocarbons	0,7	24	1,0
f) nitric acid 55%	-	-	-

2.3 Leakproofness test (with air)

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

	test pressure (gauge) [kPa]	test time [min]
a) water	-	-
b) wetting solution	-	-
c) acetic acid	-	-
d) n-butylacetate / with n-butyl-acetate saturated wetting solution	-	-
e) mixture of hydrocarbons	25	5
f) nitric acid 55%	-	-

2.4 Internal pressure test (hydraulic)

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

	test pressure (gauge) [kPa]	test time [min]
a) water	-	-
b) wetting solution	-	-
c) acetic acid	-	-
d) n-butylacetate / with n-butyl-acetate saturated wetting solution	-	-
e) mixture of hydrocarbons	175	30
f) nitric acid 55%	-	-

2.5 Permeability test with mixture of hydrocarbons (white spirit)

After storage with a mixture of hydrocarbons:
permeation rate < 0,0008 g / L·h

3. Description of the design type

3.1 Type

kind of packaging	3H1
designation by manufacturer	6 litres jerrican, HDPE, Article Rapidon

3.2 Dimensions

length x width [mm]	397 x 140
height [mm]	262
nominal capacity [l]	6,0
brimful capacity [l]	6,12

3.3 Material type

drum	Equate HDPE
manufacturing process	blow moulding
screw caps	HDPE
gaskets	PE foam

3.4 Closures

filling opening [mm]	Ø 42
torque [Nm]	12 Nm

3.5 Tare mass and max. gross mass

jerrican [kg]	0,83
max. admissible gross mass [kg]	7,0

3.6 Documents to consider

- Drawing No 118528B+ dated 01.03.2016 of the manufacturer
- Test report 160313 dated 06.02.2017, TÜV Rheinland Industrie Service GmbH, D – 06118 Halle

This test report supplements the present approval.

4. Scope of application

4.1 Contents and packing group

The packagings may be used for liquid products of the packing group II or III with 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, paragraph 6.1.6

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

- **mixture of hydrocarbons (white spirit)**

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 4.1.1.21.

The packing group, the density and the vapour pressure at 50° resp. 55°C of the equivalent goods shall not exceed the following values:

			vapour pressure lower than	
	max. density [kg/l]	packing group	[kPa] at 50°C	[kPa] at 55°C
a) water	-	-	-	-
b) wetting solution	-	-	-	-
c) acetic acid	-	-	-	-
d) n-butylacetate / with n-butylacetate saturated wetting solution	-	-	-	-
e) mixture of hydrocarbons	1,0	II, III	154	180
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 performed after storage of original goods in the packagings according to the transport regulations RID/ADR, paragraph 6.1.5.2.5, the chemical compatibility of the drums with the following goods is guaranteed:

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 guaranteed:

No approval.

5. Further requirements / conditions

5.1 Conformity with the 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 3.8.

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 paragraph 4.4 and 4.5.

5.4 Series production of packagings

The production of packagings in series according to the standard EN ISO 16106 shall follow a quality assurance programme accepted by the federal office of transport (FOT) or by a monitoring body recognized by FOT.

The observance of the quality assurance programme will be inspected by Swiss TS or by an expert admitted by Swiss TS.

5.5 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 the approval and amendments, the approval could become invalid.

For design type modifications the holder of the approval has to apply for acceptance by an authorised conformity assessment body.

6. Marking

The marking shown below must be affixed to the packaging:

UN 3H1 / Y1.0 / 170 / *month and year of manufacture**) **/ CH / SwissTS 4204646 – BMS**

*) to be substituted by last two digits of the month and year of the manufacturing

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

7. Approval

Above described packagings are approved for the transport of dangerous goods based on the results of the additional design type tests.

The additional design type tests were carried out in accordance with the requirements given by the legal base and the transport regulations listed in paragraph 1 of this amendment to the approval, valid at the time this amendment of the approval was issued.

This approval is valid until 28.02.2027. In case of deviations of the produced packagings in series from the design type the approval with this amendment may be revoked at any time.

In case of changes of the transport regulations the holder of the approval has to apply for the necessary modifications of this approval.

Wallisellen, 22.02.2017

Swiss TS Technical Services AG

Dr. Silke Holzinger
Sachverständige

i.V.

Wolfgang Helbling
Sachverständiger