



First and
unique
worldwide

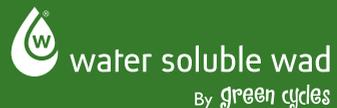
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WAD FOR ECOLOGICAL CARTRIDGE

Minimize the environmental impact of shooting activities

Green Cycles BT material

compostable
biodegradable
no waste
water soluble
non toxic





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WAD FOR ECOLOGICAL CARTRIDGE

Water soluble and biodegradable wads for ecological cartridge

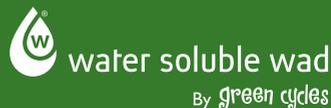
Green Cycles wads for cartridge are manufactured with an own formula that includes a biopolymer plastized with vegetal substances to get injected products.

All the products and pieces obtained are biodegradable, compostable, non toxic, and innocuous for the environment.

Additionally to those properties the Green Cycles materials are soluble in water at different temperatures. Starting since 5°C of water temperature the wad dissolves completely in a few minutes. That characteristic make Gren Cycles wads for ecological cartridge a perfect solution, espe-

cially in wetland and areas close to the ocean or rivers.

Considering the technical specifications required for wads for cartridge, the Green Cycles material has been formulated to fulfil perfectly with the functionality expected, even giving better ballistic results than cartridges loaded with standard wads. After the use the Green Shoot wads finishing its life as CO₂, water, mineral salts and natural fertilized for the environment thanks to the biological and bio oxidation phenomenon. With the use of the Green Cycles wads for cartridge we are contributing to increase the organic matter of agricultural land improving it's fertility.



Wad References

STEEL	gr	gr	gr
CAL 12	A24	A28	A32
CAL 20	A24	-	-
LEAD		gr	gr
CAL 12	-	P28	P32
DISC			

Available CAL 12 and CAL 20

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Biodegradable and environmental friendly component WAD for a cartridge

After two hours raining outdoors



After twelve hours raining outdoors



Natural state



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After one day raining outdoors





PATENT PRODUCT 2014
n° EPI4707333EP & PI4772896US

Can your supplier certificate the same standards?

Certifications



Biodegradable according to
UNE-EN-ISO 1485 I



UNIVERSITAT
POLITÈCNICA
DE VALÈNCIA

Non toxic material according to
UNE-EN-ISO 7346-I
and UNE-EN-ISO 634 I



Compostable according to
EN-13432/ASTM6400



Biodegradable Marine
according to OWS



Toxicity Certificate

The Centre of Biomateriales from the Universidad Politécnica de Valencia, after toxicologist studies on material: Material BT, from Plásticos Hidrosolubles, certificate that this material can be considered as:

Non toxic

Under regulation EN ISO 7346-1, "Water quality. Determination of the acute lethal toxicity of substances to a freshwater fish (Brachydanio rerio Hamilton-Buchanan (Teleostei, Cyprinidae) Part 1: Static method" and, regulation EN ISO 6341 "Water quality. Determination of the mobility of *Daphnia magna* Straus (Cladocera, Crustacea). Acute toxicity test"

Valencia April, 12th, 2007


CENTRO DE BIOMATERIALES
UNIVERSITAT POLITÈCNICA DE VALÈNCIA

Ana Vidaurre Garayo



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VINÇOTTE nv
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CERTIFICATE FOR AWARDING AND USE OF THE 'OK COMPOST' CONFORMITY MARK

No. O 17-2534-A
(Prolongs the certificate N° O 12-844-A)
issued by VINÇOTTE nv

For the product(s) described hereafter :

Product Domain :	Compostable Products
Product Group :	Raw materials
Product Family :	Bio material
Product Type :	In form of Resin or Granulates
Trade mark :	Water Soluble Film BT
Product description / Particularities :	Maximum thickness : 81 µm Colour : transparent

Conformity examination applied for by :

Plásticos Hidrosolubles S.L.
Miguel Angel Blanco 48
49138, Rafelbunyol
Spain

Criteria for certification :

- Test Program with reference OK 1 edition E
- including EN 13432 (08-2003) + Packaging - Requirements for packaging recoverable through composting and biodegradation - Test scheme and evaluation criteria for the final acceptance of packaging »

Validity of the certificate :

From 19 April 2017 till 19 April 2022

Conclusions of the examination :

The products comply with the above mentioned certification criteria, as confirmed by the test report no 09/603526934/707381p.

Applicable certification system :

Type examination followed by supervision through verification tests on samples from the distributor's stocks or of the market.
The conformity of the product is guaranteed by the procedures for awarding and use of the 'OK compost' conformity mark. This only applies for specimen bearing the 'OK compost' mark.

This certificate is issued in English and Spanish.

Brussels, 05 July 2017

P. MICHELS
Contact Manager


For the Certification Committee
Ph. DEWOLFS
President of the Committee

O.W.S. Edition: 1
Code: MCO-4-ec Page: 1 of 3
Date: Jul-22-09

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY
COMPOSTABILITY TESTING PROGRAM
ON
WATER SOLUBLE FILM BT
(THICKNESS: 81 µm)
ACCORDING TO EN 13432 (2000) AND ASTM D 6400-4
STUDY MCO-4

Plásticos Hidrosolubles S.L.
C/Miguel Ángel Blanco 46-52
46138 Rafalbuñol Valencia
SPAIN

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Code: MCO-4-ec Page: 3
Date: Jul-22-09

EXECUTIVE SUMMARY

GENERAL CONCLUSION

As a general conclusion it can be stated that material Water Soluble Film with a thickness of 81 µm does fulfill the evaluation criteria for material characteristics, biodegradation, disintegration and compost quality, which are outlined in the CEN norm EN 13432 (2000) 'Requirements for packaging recoverable through composting and biodegradation - Test scheme and evaluation criteria for the final acceptance of packaging' and the ASTM norm D 6400-04 'Standard Specification for Compostable Plastics'. Test material Water Soluble Film BT (81 µm) can be concluded to be fully compostable.

Gent, July 22, 2009

Bruno DE WILDE
Lab Manager, O.W.S. nv.

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O.W.S. Edition: 1
Code: MCO-4-ec Page: 2 of 3
Date: Jul-22-09

EXECUTIVE SUMMARY

On December 08, 2008 a compostability testing program was initiated on material Water Soluble Film BT with a thickness of 81 µm in line with the CEN norm EN 13432 of September 2000 'Requirements for packaging recoverable through composting and biodegradation - Test scheme and evaluation criteria for the final acceptance of packaging' and the ASTM norm D 6400-04 'Standard Specification for Compostable Plastics'.

Following basic characteristics were evaluated: material characteristics, biodegradation and disintegration including effects on the biological treatment process and effect on quality of compost. The detailed test results are given in the various reports. The study plans are given in Appendix 1.

Material characteristics

The volatile solid concentration and heavy metal content of Water Soluble Film BT are reported in report R-MCO-4/5. The material fulfills all requirements on volatile solids and heavy metals as stipulated by EN 13432 (2000) and ASTM D 6400-04. Also the IR-spectrum is given in report R-MCO-4/5.

Biodegradation under aquatic and aerobic conditions

Material Water Soluble Film BT was tested on biodegradation in an aqueous aerobic biodegradation test at ambient temperature (21°C) (see report R-MCO-4/1). After 35 days an absolute biodegradation result of 84.7 ± 5.1 % (105.0 % relative to cellulose) was obtained for Water Soluble Film BT. Material Water Soluble Film BT fulfills the 90% biodegradability requirement of EN 13432 (2000) and ASTM D 6400-04. The test item may therefore be considered as completely biodegradable at ambient temperature.

Pilot-scale composting test

Test item Water Soluble Film BT with a thickness of 81 µm showed 90.4% disintegration in a pilot-scale aerobic composting test of 12 weeks (see report R-MCO-4/2). The material passed the 90% disintegration requirement as prescribed by EN 13432 (2000) and ASTM D 6400-04.

Compost quality - Ecotoxicity tests

The addition of 10% Water Soluble Film BT at start of the composting process did not cause a negative effect on compost quality (including chemical parameters and ecotoxicity tests) (see reports: R-MCO-4/2 (pilot-scale composting test), R-MCO-4/3 (summer barley plant growth test) and R-MCO-4/6 (ress test)).





= ZERO LITTERING



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