

DIVISIONE: **PHYSICAL- CHEMISTRY**
 DIVISION:

LABORATORIO:
 LABORATORY:

PACKAGING

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| <p>RAPPORTO DI PROVA <i>(Test Report)</i></p> <p>N° 422e-ING/LCF/PKG/04</p> | <p>Pag. 1 di/of pag. 3</p> <p>Data: 30/07/04 Date:</p> |
|--|---|

IDENTIFICAZIONE E DESCRIZIONE DEL CAMPIONE:
 SPECIMEN DESCRIPTION:

**Expanded corks signed "SIGILLO",
 inserted in wine bottles**

DATI IDENTIFICATIVI DEL CLIENTE:
 CLIENT:

OREMPLAST s.r.l.
 Via Martiri della libertà, 60
 48024 MASSA LOMBARDA (RA)

NORMA DI RIFERIMENTO:
 REFERENCE STANDARD:

ASTM F1307-90

DISTRIBUZIONE ESTERNA:
 OUTSIDE DISTRIBUTION:

OREMPLAST s.r.l.
to Mr. CASADEI LELLI

DISTRIBUZIONE INTERNA:
 INSIDE DISTRIBUTION:

Copy to: Division Head

ENTE DI ACCREDITAMENTO:
 ACCREDITATION BODY:

Mod. 37/1 - Rev. 6



CSI
Certificazione e Testing

RAPPORTO DI PROVA
(Test Report)

N° 422e-ING/LCF/PGK/04

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Data: 30/07/04
Date:

GENERALITIES:

- Date sample receipt: 05.06.02
- Date Analysis beginning : june 02
- Date Analysis end: 09.07.02
- Normalized internal procedure: YES
- Deviation from test methods: NO
- Calculations check and data transfer: YES

SAMPLES DESCRIPTION :

Expanded corks signed "SIGILLO", inserted in wine bottles

PERFORMED DETERMINATIONS:

Determination of the Oxygen Transmission Rate according to ASTM F1307-90, that previews the isostatic procedure and use of OX-TRAN 2/20 instrumentation, operating at 23°C and ambient UR on the external surface.

The internal surface is constantly wet by an hydroalcoholic solution to 15%.

The necks of the bottles have been cut glued on a metallic support on which copper tubes are welded (1/8" with connections SWAGELOK from 1/8").

The samples are then connected to the internal semicell of the instruments, in which the carrier is nitrogen + 2 % hydrogen .

The permeability to the oxygen of the corks is given therefore from the difference of the signal produced from the detector in the two phases (a-b):

a = sample's signal + support + connectors

b = internal signal

DECLARATION:

- The test results of the present report are related exclusively to the tested sample.
- The present test report cannot be partially reproduced without the authorization of CSI
Managing Director



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The test results of the present report are related to corks heighted 37 mm, since using this condition the test is stricter than the shynthetic cork heighted 44 mm.

RESULTS:

The values of the Oxygen Transmission Rate according to ASTM F1307-90 are reported in the following table :

| SAMPLE | O ₂ TR 23°C UR ambient (cc/cork x 24h x air) |
|---------------------------------|--|
| Expanded corks signed "SIGILLO" | 0.019 – 0.020 |

RESP. DIV. CHIMICA-FISICA

Laboratory Head

Dr. Gianluigi VESTRUCCI

RESP. CENTRO

Managing Director

Ing. Pasqualino CAU