



CERTIFIED COPY OF ORIGINAL

Project: VOC Packing Fugitive Test

Certificate Number: KID 0114048/1

Client: JEIL E & S Co., Ltd.

Office: Seoul

Client's Order Number:

Date: May 28, 2001

Order Status: Complete

Inspection Dates

From: May 22, 2001

To: May 23, 2001

This certificate is issued to Messrs. JEIL E & S Co., Ltd. to certify that the undersigned Surveyor to this Society attend at their factory, Yang san, Korea on May 22, 2001 and subsequently for the purpose of witnessing leak tests of the undernoted A.V.P.(Anti-VOC Packing) Combination Set.

Description

1) Test Conditions

- ① Packing Type : A.V.P.(Anti-VOC Packing) Combination Set.
- ② Packing Size : Ø28.6 X Ø45.2 X 39.6H (5 Rings)
- ③ Test Gas : Methane 99.999%
- ④ Gas Pressure : 45 kg/cm²G
- ⑤ Seating Stress : 130 kgf/cm²
- ⑥ Test Temp. : Room Temp.(App. 18°C)
- ⑦ Gland Bolt Torque : 200 kg.cm
- ⑧ Cycling

Stem Stroke	50 mm
Stem Speed	31 mm/sec
Total Cycle	6,000 cycle

2) Test Method : EPA Method 21 - determination of volatile organic compound leaks

3) The Results of Inspection and Tests

Leak test for the subject packing has been carried out at the Manufacturer's factory, in the presence of the undersigned surveyor, and the results found are as follows :

Cycle	1000	2000	3000	4000	5000	6000
Leakage(ppm)	3.18808	3.40185	3.77576	5.41477	3.50187	11.17460

* Finally total leakage at 6000 cycle is found to be 11.17460ppm.

It was verified that the leak test equipments and leak detector has been calibrated as follows:

Equipment	Serial No.	Calibration Date
Pressure Gauge	130455	Nov. 29, 2000
Torque wrench	00014Y	Nov. 29, 2000
Gas Chromatography	HP6890	Feb. 13, 2001



Surveyor to Lloyd's Register of Shipping