

TEST REPORT

No. 103a / 03

Client PETERS RESEARCH GmbH + Co KG
Mrs. Tanja Touré
Hooghe Weg 13
D – 47906 Kempen

Date of order 2003-05-16

Date of receiving the specimens 2003-05-26

Period of testing 2003-05-07 to 2003-06-18

1 TEST OBJECT

1.1 Designation / Number of pieces

Two-pack solder resist applied on printed circuit boards as follows

- 1.1.1 ELPEMER® SD 2467 ## / 3 pieces
- 1.1.2 ELPEMER® GL 2467 ## / 3 pieces
- 1.1.3 ELPEMER® SD 2469 SM / 3 pieces
- 1.1.4 ELPEMER® GL 2469 SM / 3 pieces

1.2 Producer see client

2 TASK

Testing to determine the protection effect for copper lamination during exposure of Flowing mixed gas in accordance with DIN EN 60068-2-60 : 1996-09, Test Ke, Methode 4 / BMW GS 95003-4

3 TEST PROGRAMME

3.1 Initial visual inspection

3.2 Loading by Flowing mixed gas in accordance with DIN EN 60068-2-60, Test Ke, Method 4

Measurement of the gas concentration by Zellweger analytics TOX GAS MONITOR 7100

Concentration of H ₂ S	0,01 cm ³ / m ³	(ppm)	(10 ± 5) ppb
Concentration of NO ₂	0,2 cm ³ / m ³	(ppm)	(200 ± 20) ppb
Concentration of Cl ₂	0,01 cm ³ / m ³	(ppm)	(10 ± 5) ppb
Concentration of SO ₂	0,2 cm ³ / m ³	(ppm)	(200 ± 20) ppb
Temperature	(25 ± 2) °C		
Relative Humidity	(75 ± 3) %		
Test duration	21 d		

3.3 Examination after the loading by Flowing mixed gas

3.3.1 Visual inspection after 10 d

3.3.2 Final visual inspection after 21 d

4 RESULTS

4.1 Initial visual inspection

Damages or defects are not visible.

4.2 Examination after the loading by Flowing mixed gas

4.2.1 Visual inspection after 10 d

Significant changes are not visible, no corrosion has occurred.

4.2.2 Final visual inspection after 21 d

Significant changes are not visible, no corrosion has occurred.

Leipzig, 2003-06-18

Annex sheet 1/1

**Laboratory for Environmental
Testing and Testing Materials**

p.p. Peter
Dipl.-Chem. Klaus Efer
Laboratory Manager

TZO / LUW

Client: PETERS RESEARCH GmbH + Co KG Kempen

Date of order: 2003-05-16

Annex Sheet 1/1

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Measurement of the gas concentration by Zellweger analytics
TOX GAS MONITOR 7100

Chlor 28.05.03 E.

10:14	10	PPB	CL2/L
10:04	10	PPB	CL2/L
09:54	10	PPB	CL2/L
09:44	9	PPB	CL2/L
09:34	9	PPB	CL2/L
09:23	7	PPB	CL2/L

 TZO BMGH
 LEIPZIG
 SERIES 7100 SM-5394

 OPTICS
 CALIBRATION

PERFORMED
 ON AT
 05/28/03 09:11:47

NEW Q IS 1.053

OLD Q WAS 1.048

CARD SPAN - 1718

CARD ZERO - 600

ACTUAL SPAN- 2244

ACTUAL ZERO- 1183

28.05.03 E.

CURRENT VALUES ARE:
 CARD SPAN - 1718
 CARD ZERO - 600

Schwefel dioxide 28.05.03 E.

15:37	200	PPB	SO2/L
15:34	206	PPB	SO2/L
15:31	203	PPB	SO2/L
15:29	196	PPB	SO2/L
15:26	197	PPB	SO2/L
15:24	204	PPB	SO2/L
15:21	207	PPB	SO2/L
15:19	211	PPB	SO2/L
15:16	203	PPB	SO2/L
15:14	189	PPB	SO2/L

Schwefelwasserstoff 28.05.03 E.

13:45	7	PPB	H2S/L
13:35	7	PPB	H2S/L
13:24	7	PPB	H2S/L
13:14	7	PPB	H2S/L
13:04	7	PPB	H2S/L

Stickstoffdioxid 28.05.03 E.

12:12	200	PPB	NO2/L
12:10	191	PPB	NO2/L
12:08	191	PPB	NO2/L
12:05	192	PPB	NO2/L
12:03	193	PPB	NO2/L
12:01	193	PPB	NO2/L
11:58	194	PPB	NO2/L
11:56	192	PPB	NO2/L
11:53	189	PPB	NO2/L
11:51	186	PPB	NO2/L