

## ESD MEMBRANE OUTGASSING DYNAMIC HEADSPACE (DHS)

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### Technical Datasheet

#### METHOD SUMMARY

Dynamic headspace is performed by placing a sample of the ESD Membrane from a MB-100x75SD/30 in a sealed container and a flow of carrier gas is allowed through. The sealed container is warmed and the headspace atmosphere is constantly purged out through a trap. After this collection step, the trap is heated and backflushed to transfer the absorbed compounds to the Gas Chromatograph (GC) for analysis.

#### TEST STANDARD

IDEMA M11-99, General Outgas Test Procedure by Dynamic Headspace Analysis.

#### TEST METHOD AND RESULTS:

1. Weighed the ESD Membrane sample and put into chamber and baked at 85°C for 3hrs, N<sub>2</sub> purge flow rate: 50ml/min.
2. GC & analysis condition:
3. Held the oven at 40°C for 2mins then ramp to 280°C at a rate of 10°C/min, split ratio 5:1, database is NIST05a.L , initial threshold is 16.
4. 3) Use 5µl 200ppm hexadecane in hexane as external standard for calculation.

Total Outgassing
162.4 µg/g

#### GEL-PAK

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## Search Report

PK	RT(min)	Area (%)	Possible Compound	CAS No.	Match
1	13.65	3.36	1,4-Butanediol	000110-63-4	90
2	14.62	2.12	Phenol	000108-95-2	96
3	15.88	0.80	2-Pyrrolidinone, 1-methyl-	000872-50-4	94
4	20.61	0.37	Phenol, 2-(1,1-dimethylethyl)-5-methyl-	000088-60-8	94
5	20.93	0.32	2-Butyramido-2-[4-chloro-2-(trifluoromethyl)anilino]-1,1,1,3,3,3-hexafluoropropane	1000224-20-4	35
6	22.88	0.64	2,5-Cyclohexadiene-1,4-dione, 2,6-bis(1,1-dimethylethyl)-	000719-22-2	94
7	22.92	0.34	3',5'-Dimethoxyacetophenone	039151-19-4	47
8	23.04	8.56	Dihydrocoumarin, 4,4,5,7,8-pentamethyl	039170-97-3	45
9	23.18	0.51	Octadecane, 1-iodo-	000629-93-6	80
10	23.47	27.31	Butylated Hydroxytoluene	000128-37-0	97
11	23.73	0.57	1-Iodo-2-methylundecane	073105-67-6	72
12	23.88	3.07	1,6-Dioxacyclododecane-7,12-dione	000777-95-7	93
13	23.96	0.55	Octadecane, 1-iodo-	000629-93-6	35
14	24.44	22.22	2(3H)-Furanone, dihydro-3-hydroxy-4,4-dimethyl-	052126-90-6	47
15	26.28	0.24	Cyclohexane, 1,1'-[methylenebis(oxy)]bis-	001453-21-0	37
16	26.36	0.29	3,5-di-tert-Butyl-4-hydroxybenzaldehyde	001620-98-0	96
17	27.67	1.07	Hexadecanenitrile	000629-79-8	93
18	28.14	0.35	Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-, methyl ester	006386-38-5	90
19	29.54	25.40	1-Penten-3-ol, 2-methyl-	002088-07-5	50
20	33.47	0.35	Diaziridine, 1,2-dimethyl-	006794-95-2	78
21	35.37	1.58	4,4'-Ethylenebis(2,6-di-tert-butylphenol)	001516-94-5	83

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