

Determination of Chemical Species in Marine Fuel Oil by Multidimensional GC/MS(Direct Injection)

No.	Group(s)	No.	Chemical Component(s)
1	Chlorinated Hydrocarbon	20	Dichloromethane
2			1,1-Dichloroethane
3			Chloroform/Trichloromethane
4			1,2-Dichloroethane
5			1,2-Dichloropropane
6			Carbon Tetrachloride (CCl ₄)
7			Trichloroethylene
8			Tetrachloroethylene
9			1,1,1,2-Tetrachloroethane
10			Chlorobenzene
11			1,1,2,2-Tetrachloroethane
12			1,2,3-Trichloropropane
13			Pentachloroethane
14			1,3-Dichlorobenzene
15			1,4-Dichlorobenzene
16			1,2-Dichlorobenzene
17			Hexachloroethane
18			1,2,3,5-Tetrachlorobenzene + 1,2,4,5-Tetrachlorobenzene
19			1,2,3,4-Tetrachlorobenzene
20			1,1,2-Trichloroethane
21	Phenols & Alkyl Phenols	12	Phenol
22			2-Ethyl Phenol
23			2,4-Dimethyl Phenol
24			4-Ethyl Phenol + 3-Ethylphenol
25			4-Isopropylphenol
26			4-Cumyl Phenol
27			4-(Benzyloxy)phenol (PBP)
28			o-Cresol (2-methylphenol)
29			p-Cresol + m-Cresol (4-methylphenol + 3-methylphenol)
30			Catechol (1,2-dihydroxybenzene)
31			Hydroquinone (1,4-dihydroxybenzene)
32			Resorcinol (1,3-dihydroxybenzene)
33	Styrene & Alkyl Styrene	9	Styrene
34			alpha-Methyl Styrene
35			3-Methyl Styrene
36			2-Methyl Styrene
37			4-Methyl Styrene
38			trans-B-Methyl Styrene
39			para, alpha-Dimethyl styrene
40			2,5-Dimethyl styrene
41			2,4-Dimethyl styrene
42	DCPD, Dihydro DCPD, Tetrahydro DCPD, Indene	5	Dicyclopentadiene (DCPD)
43			5,6-Dihydrodicyclopentadiene (DHDCPD)
44			Exo-Tetrahydrodicyclopentadiene(Exo-THDCPD)
45			Endo-Tetrahydrodicyclopentadiene(Endo-THDCPD)
46			Indene
47	Esters	2	n-Butyl acrylate
48			n-Butyl ether
49	Alcohol	7	n-Butyl alcohol
50			Cyclohexanol
51			1-Phenyl ethanol
52			2-Phenyl ethanol (phenylethanol)
53			2-Phenoxy ethanol
54			1-Phenoxy-2-Propanol + 2-Phenoxy-1-1-propan
55			Styrene Glycol
56	Others	4	1-methyl-2-pyrrolidone (NMP)
57			alpha-Pinene
58			beta-Pinene
59			Limonene