



**FUEL ANALYSES CORRESPONDING  
 TO DATA IN (COMBUSTION MAIN DATA, EXCESS AIR, SENSIBLE HEAT LOSSES)**

	C	H <sub>2</sub>	S <sub>2</sub>	N <sub>2</sub>	O <sub>2</sub>	CH <sub>4</sub>	C <sub>2</sub> H <sub>6</sub>	C <sub>3</sub> H <sub>8</sub>	C <sub>4</sub> H <sub>10</sub> etc.	CO <sub>2</sub>
Coal	85.5	4.9	1.2	1.9	6.5					
Fuel oil	84.6	12.4	2.5	0.5						
Lacq gas				0.3		95.5	3.4	0.6	0.2	
Slochteren gas				14.02		81.3	2.85	0.37	0.36	0.92
Ekofisk gas				0.48		84.72	8.72	3.08	1.13	1.87
Enriched gas (Blend)				2.84		87.91	5.74	1.73	0.69	1.11



## COMBUSTION MAIN DATA

Fuel	GCV MJ/kg	NCV MJ/kg	Density (relative) d	Wobbe Index $\frac{GCV}{d^2}$	% CO <sub>2</sub> Stoich.	Air Nm <sup>3</sup>	Dry products Nm <sup>3</sup>	Wet products Nm <sup>3</sup>
<b>Coal</b>		<b>36.0</b>			<b>18.75</b>	<b>8.78</b>	<b>8.57</b>	<b>9.12</b>
<b>Oil</b>	<b>44.5</b>	<b>41.5</b>	<b>0.835</b>	<b>54.23</b>	<b>15.45</b>	<b>8.41</b>	<b>7.69</b>	<b>9.44</b>
<b>Lacq Gas</b>	<b>41.3</b>	<b>37.0</b>	<b>0.580</b>	<b>43.86</b>	<b>11.86</b>	<b>9.86</b>	<b>8.84</b>	<b>10.89</b>
<b>Slochteren Gas</b>	<b>35.2</b>	<b>31.8</b>	<b>0.644</b>	<b>54.69</b>	<b>11.76</b>	<b>8.41</b>	<b>7.89</b>	<b>9.44</b>
<b>Ekofisk Gas</b>	<b>44.7</b>	<b>40.3</b>	<b>0.668</b>	<b>52.62</b>	<b>18.32</b>	<b>10.60</b>	<b>9.55</b>	<b>11.69</b>
<b>Natural Gas</b>	<b>41.9</b>	<b>37.8</b>	<b>0.634</b>		<b>12.08</b>	<b>9.95</b>	<b>8.97</b>	<b>11.01</b>

( Fuel analyses FUEL ANALYSES CORRESPONDING )



**EXCESS AIR, %**  
**In relation to % of CO<sub>2</sub>, for complete combustion**

% CO <sub>2</sub>	Coal	Oil	Lacq gas	Slochteren gas	Ekofisk gas	Natural gas
18.75	0					
18	4.07					
17	10.05					
16	16.77					
15.45		0				
15	24.40	3.00				
14	33.11	10.36				
13	43.12	18.85				
12.32					0	
12.08						0
12	54.89	28.76			2.44	0.64
11.86			0			
11.76				0		
11	68.76	40.47	7.03	6.34	10.86	8.90
10	85.39	54.52	16.70	16.11	20.91	18.81
9	105	71.69	28.52	28.06	33.31	30.92
8	131	93.16	43.29	43.00	48.76	46.06
7	163	120	62.28	62.19	68.59	65.62
6	207	157	87.61	87.79	95.04	91.47
5	268	209	123.06	123	132	127.80

( Fuel analyses FUEL ANALYSES CORRESPONDING )



## SENSIBLE HEAT LOSSES

(Fuel analyses FUEL ANALYSES CORRESPONDING)

CO <sub>2</sub> %	Solid Liquid		Gas			
	Coal	Oil	Lacq	Slochteren	Ekofisk	Natural
15	4.72	3.91				
14	4.55	4.14				
13	4.87	4.41				
12	5.24	4.72			4.08	
11	5.68	5.09	4.29	4.30	4.37	4.31
10	6.21	5.54	4.62	4.63	4.71	4.65
9	6.85	6.08	5.03	5.04	5.13	5.06
8	7.66	6.77	5.54	5.56	5.66	5.59
7	8.70	7.64	6.20	6.22	6.34	6.25
6	10.0	8.81	7.64	7.10	7.24	7.14
5	12.0	10.4	8.30	8.33	8.51	8.38



$t_f = t^\circ \text{ products}$

$$\% \text{ losses} = F \times \frac{t_f - t_a}{100}$$

$t_a = t^\circ \text{ combustion air.}$