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Short presentation of SINTEFs Oil Weathering Model

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Summary: Laboratory weathering data input to SINTEF Oil Weathering Model

• Lab weathering data:

PROPERTY	Fresh	150°C+	200°C+	250°C+
Boiling liquid) temp. (°C)	-	210	255	300
Volume topped (%)	0	8	15	24
Residue (wt.%)	100	93	87	78
Specific gravity (g/l)	0.893	0.903	0.909	0.919
Pourpoint (°C)	-39	-15	-9	3
Flashpoint (°C)	3	50	80	119
Viscosity at 13°C(cP)	27	49	83	200
Viscosity of 50% emulsion (cP)	-	343	593	1300
Viscosity of 75% emulsion (cP)	-	1815	2673	4790
Viscosity of max water (cP)	-	2250	3079	4790
Max. water content (%)	-	80	77	75
Emulsification rate ($t_{1/2}$, hours)	-	0.15	0.20	0.22

• Chemical dispersibility:

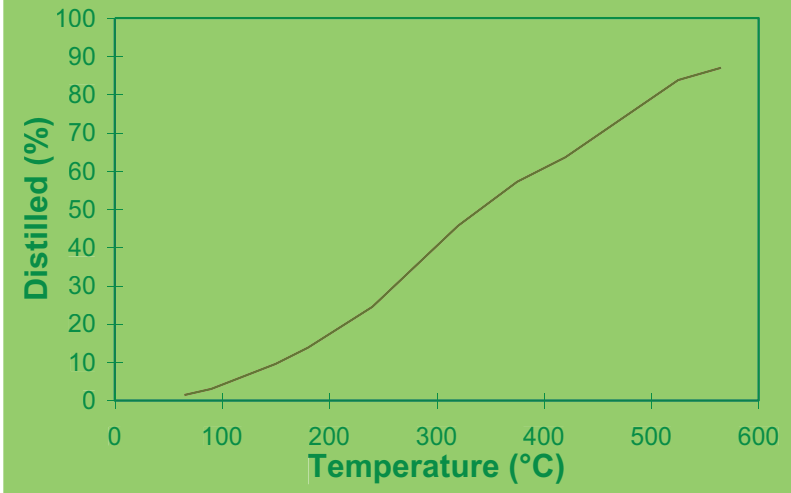
Dispersible	< 3000 cP
Reduced dispersibility	3000 - 7000
Not dispersable	> 7000

• Meso-scale flume:

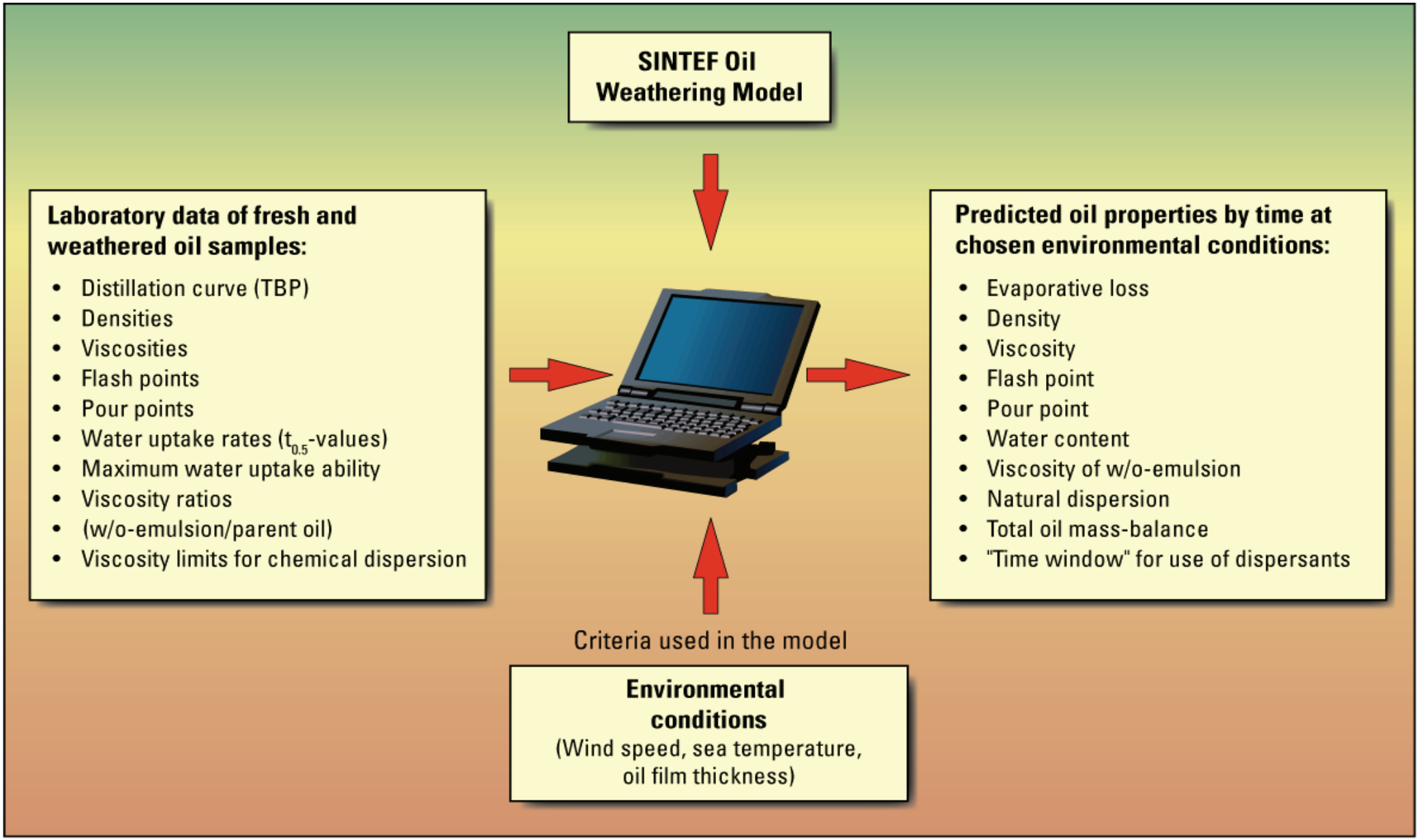
Supplementary data to bench-scale data:

- Calibration of emulsification rate / max. water
- Natural dispersion / Mass-balance
- In-situ dispersant treatment / testing

• Boiling point curve



SINTEF Oil Weathering Model



handboker/grafisk/fig-eng/model-col-eng.ai

Field verification Ground-truth sampling

Field verification - Barents Sea 2009

Measurement of oil film thickness

Sampling of surface oil

Correlation SINTEF OWM prediction and field samples (NOFO-trials, 1994)