While specific gravity alone gives confusing information, it is of value, in combination with the refractivity index, in judging the prospective, carcinogenic properties of an oil. The following tabulation of the refractivity indices and specific gravities of various oils illustrates this point (Twort and Lyth):

Origin	Refractivity		Specific Gravity
	Means	Extremes	
Russian	5503	5500–5506	9055
Texas	5510	5507–5517	9242
Californian	5540	5537–5543	9317
Pennsylvanian	5546	5542–5552	8901
Mexican	5549	5544–5555	9084
Borneo	5560	5535–5617	9454
Midcontinental	5561	5555–5566	9125
Persian	5565	5563–5569	9046
Rumanian	5570	5568–5573	9276
Shale	5621	5613–5633	8987
Venezuelan	5558	5552–5563	9292

c) Fluorescence: The degree of carcinogenicity of an oil increases with its intensity of fluorescence. Blue fluorescence is more indicative of a high carcinogenic potency than green fluorescence.

d) Color: All colored oils must be viewed with suspicion in regard to carcinogenic potency. Colorless mineral oils are harmless.

e) Viscosity: The viscosity alone gives little information concerning the carcinogenic potency of a particular oil. However, viscosity and refractivity index together may be of value in this respect. Other things being equal, the lower the refractivity index and the higher the viscosity of a refined textile oil, the lower is its carcinogenic quality. While studying a range of commercial distillates of a topped, crude, liquid petroleum from Borneo, Twort and Lyth found that the peak of carcinogenicity was present in a fraction having a viscosity of 200 to 250 centipoises at 25°C.

f) Degree of Saturation and Hydrogenation: Saturated, well-hydrogenated oils are less dangerous than unsaturated, less-hydrogenated oils. Cheaper oils of the same specific gravity, flash, and viscosity as higher priced oils are, usually, less hydrogenated and more carcinogenic than the corresponding, more expensive oils.

g) Iodine Value: The higher the iodine value, the higher the carcinogenic potency of an oil, but the iodine value is only reliable, provided that the oil tested has not been processed. The iodine value of shale oil is 46.2, while that of Russian oil is 15.0.

Twort and Lyth concluded that an investigation of the physico-chemical properties of a given oil renders reliable information, concerning the degree of potential, carcinogenic hazard connected with its industrial use.