

Sudan University of science and Technology

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Physico-Chemical Evaluation of Dar blend

**A Thesis Submitted in Fulfillment of the
Requirements for the Degree of Master of Science in Chemistry**

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Dedication

Dedicated to my mother,

My Father,

My sister,

My brothers,

Acknowledgment

I'm deeply grateful acknowledge my thanks to my supervisor Dr. AbdElssalamDfa Allah for his comments, direction and suggestion.

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ABSTRACT:

Sudanese crude oils are from the simplest types of crudes due to their low sulfur content absence of mercury and vanadium from their composition. However the physicochemical evaluation of Dar Blend undertaken by this study revealed that some constituents of the blend studied have some negative impact on the overall evaluation of the crude blend. The result of the physicochemical analysis of samples collected from Petrodar Oil fields showed that the Dar Blend is a heavy type crude, having API 23.24 and of low Asphaltene content (0.12%). However the Total Acid Number (TAN) was 4.47% a value regarded as quite high and of adverse impact on the quality of the Dar blend some suggestion were proposed to remedy the high value of TAN in order to improve the overall evaluation status of the crude investigated.

المستخلص :

تعد خامات النفط السوداني من أبسط أنواع الخامات ويرجع ذلك إلى قلة محتوى الكبريت وغياب الزئبق والفاناديوم من تكوينها. ولكن بين التقييم الفيزيوكيميائي الذي قامت به هذه الدراسة أن بعض مكونات مزيج دار ذات تأثير سلبي على التقييم الشامل لمزيج دار من النفط الخام. وأظهرت نتائج التحليل الفيزيوكيميائية (API) وله كثافة 23.24 (, للعينات التي تم جمعها من حقول بترودار أن مزيج الخام من النوع الثقيل ومحتوى منخفض من الأسفلتين (0.12%). ولكن له نسبة عالية من المحتوى الحمضي 4.47% والتي تعتبر قيمة مرتفعة جدا وذات تأثير سلبي على جودة مزيج دار. وضعت الدراسة بعض الاقتراحات لعلاج ارتفاع قيمة المحتوى الحمضي من أجل تحسين التقييم الكلي للخام.

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Chapter one

Introduction