

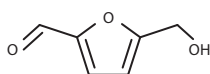


FURANS IN TRANSFORMER OIL

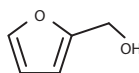
INTRODUCTION

Furans analysis together with oil soluble metal deactivator is an important analysis to monitor the degradation of winding insulation in the transformers. The presence of furans in transformer oils show the stage of the insulation degradation and a need of transformer replacement.

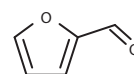
Substance: See analytes



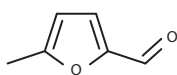
5-Hydroxymethyl-2-furaldehyde
(5HMF)



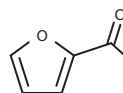
2-Furfuryl alcohol
(2FOL)



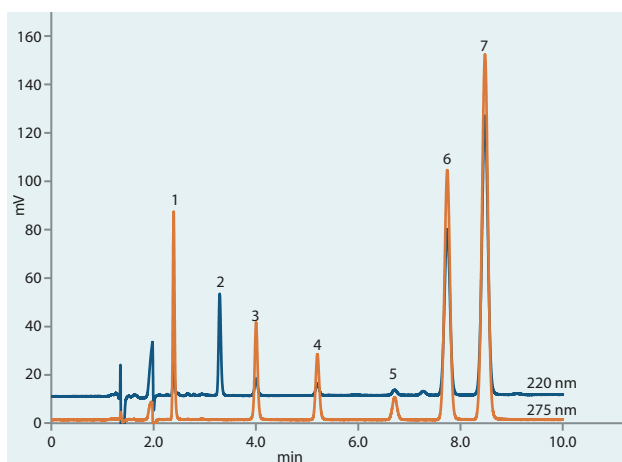
2-Furaldehyde
(2FAL)



5-Methylfurfural
(5MEF)



2-Acetyl furan
(2ACF)



Mixture of furans and passivator in water

Column	ARION® Plus C18, 3,0 µm
Dimensions	150 mm × 4.6 mm
Part number	ARI-5720-IK46
Mobile phase	Ammonium acetate 20 mM, pH 8.5 (ammonia)/ACN (80/20 v/v)
Flow rate	1.0 ml/min
Temperature	30 °C
Detection	UV @220, 275 nm
Analytes	1. 5-Hydroxymethyl-2-furaldehyde (5HMF) 2. 2-Furfuryl alcohol (2FOL) 3. 2-Furaldehyde (2FAL) 4. 2-Acetyl furan (2ACF) 5. 5-Methylfurfural (5MEF) 6.+ 7. Ciba® Irgamet® 39 isomers*

* Note: Ciba® Irgamet® 39 isomers:

N,N-bis(2-ethylhexyl)-4-methyl-1H-benzotriazol-1-amine

N,N-bis(2-ethylhexyl)-5-methyl-1H-benzotriazol-1-amine