FUNCTIONAL PRODUCTS INC.

Innovative Chemistry for Lubricants

Technical Data Sheet

FUNCTIONAL Q-145

Quench Additive for Straight Oil Fluids

APPLICATION:

FUNCTIONAL Q-145 is a quench fluid additive package for straight oils. **FUNCTIONAL Q-145** is designed to create both normal and medium quench rate fluids in API Group I or API Group II base oils.

FUNCTIONAL V-731 is recommended as a quench accelerator for use with **FUNCTIONAL Q-145**.

COMPOSITION:

FUNCTIONAL Q-145 is a blend of antioxidant, quench accelerant, and anti-tarnish agents in oil.

Typical Properties	
Appearance	Dark Amber
KV 100 (ASTM D445)	6 cSt
KV 40 (ASTM D445)	37 cSt
Lbs. per Gallon	7.5
Flash Point (ASTM D92)	>200 C/392 F

TREATMENT LEVEL:

Treat rates of 2-3% are recommended. Medium quench oils may require use with up to 2% quench accelerator.

HANDLING:

Store in a cool, dry area. See current Safety Data Sheet before use.

FUNCTIONAL Q-145 is hazard-free after dilution at recommended treat rates in base oil.

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FORMULATION GUIDE:

- **Quench Oil Classifications:**
  - Fast = 7-9 GMQS
  - Medium = 10-13 GMQS
  - Normal = 14-16+ GMQS
- **FUNCTIONAL Q-145** is suggested for use with 2% accelerator to achieve medium quench speed.
- **FUNCTIONAL Q-145** is suggested for use with 1% accelerator to achieve normal quench speed.

Medium Quench Oil using **FUNCTIONAL Q-145** in 70N API Group II

Typical Performance in 70N Gr. II	
Quenchometer, ASTM D3520	11.5 GMQS
Quenchalyzer, ASTM D6200	
-Maximum Cooling Rate	94 C/sec
-Temperature at Max Rate	616 C
-Time to 600C	8.4 sec
-Time to 400C	12.0 sec
-Time to 200C	43.9 sec
Oxidation Induction Time, ASTM D6186	36 min
Conradson Carbon Residue, ASTM D189	0.12%

Formula by wt%	Wt%
70N Gr. II	95.0
FUNCTIONAL Q-145	3.0
FUNCTIONAL V-731	2.0

Normal Quench Oil using **FUNCTIONAL Q-145** in 70N API Group II

Typical Performance in 70N Gr. II	
Quenchometer, ASTM D3520	14.9 GMQS
Quenchalyzer, ASTM D6200	
-Maximum Cooling Rate	79 C/sec
-Temperature at Max Rate	550 C
-Time to 600C	10.8 sec
-Time to 400C	14.1 sec
-Time to 200C	44.1 sec

Formula by wt%	Wt%
70N Gr. II	96.0
FUNCTIONAL Q-145	3.0
FUNCTIONAL V-731	1.0

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