

CALTRAN™ 60-40 GROUP I TRANSFORMER OIL

Calumet Specialty Products Partners has over 25 years of experience producing highly-refined, clean, and stable electrical insulating fluids. Calumet participates in the Annual DOBLE Survey on transformer oil. Developed in-house by Calumet's R&D group, CALTRAN™ 60-40 Group I is a superior paraffinic transformer oil that fully meets IEC 60296, ed. 4, 2012 general specifications for inhibited oil.

IEC 60296 is a recognized, continually updated, international standard and applicable to specifications and test methods for unused mineral insulating oils. Transformer oil is categorized into three grades: Trace Inhibited (<0.08% inhibitor content), Inhibited (0.08% - 0.40% inhibitor content), and Uninhibited which contains no inhibitor or antioxidant additives such as DBPC or DBP.

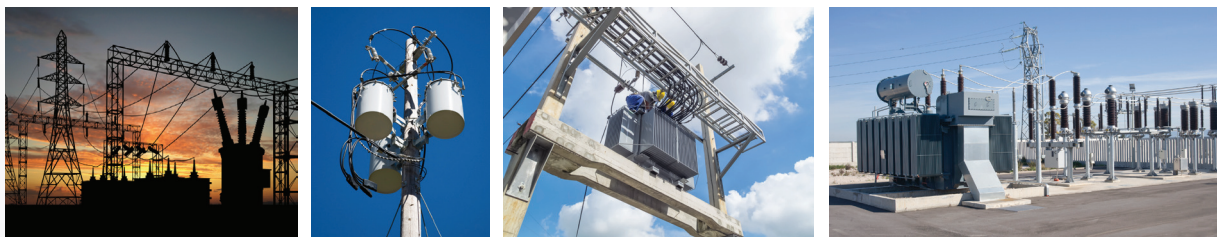
CALTRAN™ 60-40 Group I provides . . .

- **Compliance:** Fully meets IEC 60296, ed. 4, 2012 general specifications for inhibited oil
- **Confidence:** Verified by an accredited independent laboratory
- **Safety:** Meets IP 346 and Modified Ames criteria for biological safety
- **Performance:** Outstanding oxidation stability under severe conditions
- **Flexibility:** Fully miscible with insulating oils meeting IEC 60296: 2012 specifications
- **Value:** Optimal protection against corrosion, longer oil life and greater efficiency
- **Choice:** Latest advancements in paraffinic transformer oil technology

TECHNICAL ASSISTANCE

For product or technical questions contact your Sales Representative or Calumet Product Support.

Product Support:
1-800-437-3188



CALTRAN™ 60-40 GROUP I PRODUCT DATA SHEET

PHYSICAL PROPERTIES	UOM	METHOD	TYPICAL
VISCOSITY @ 40°C	mm ² /s	ISO 3104	8.21
VISCOSITY @ -30°C	mm ² /s	ISO 3104	878.4
POUR POINT	°C	ISO 3016	-51.0
WATER CONTENT	mg/kg	IEC 60814	25
BREAKDOWN VOLTAGE		IEC 60156	58
DENSITY @ 20°C	g/mL	ISO 3675	0.8690
DDF @ 90°C (BEFORE OXIDATION)		IEC 60247	0.002
APPEARANCE		VISUAL	B/C
ACIDITY	mg KOH/g	IEC 62021-1	<0.010
INTERFACIAL TENSION		ISO 6295	45.0
INHIBITORS OF IEC 60666		IEC 60666	0.35
CORROSIVE SULFUR		DIN 51353	NONCORROSIVE
METAL PASSIVATOR ADDITIVES		IEC 60666	N/D
FURFURAL CONTENT	mg/kg	IEC 61198	0.004
OXIDATION STABILITY	hrs	IEC 61125C	514
TOTAL ACIDITY	mg KOH/g	IEC 61125C	0.49
SLUDGE	%	IEC 61125C	0.16
DDF @ 90°C (AFTER OXIDATION)		IEC 60247	0.160
FLASH POINT	°C	ISO 2719	148
PCA CONTENT	%	IP 346	0.7
PCB CONTENT		IEC 61619	<1

All properties are typical values, unless otherwise noted, and may vary.

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