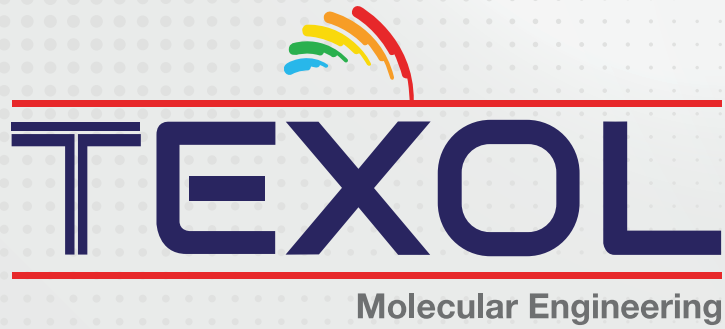




Powered By

 **gandhar**
oil refinery (india) ltd.

TRANSFORMER OIL



TRANSFORMER OIL

Texol Transformer Oils are manufactured from carefully selected New Generation Right Base Oil with emphasis on product purity at every stage of refining.

They are Manufactured to meet the following specifications:

- IEC 296
- IEC 60296: 2020 Edition 5.0

TEXOL RANGE OF TRANSFORMER OIL

- | | |
|---|---|
| ■ Texol Powertex PU-20
Spec: IEC 296
Type: Paraffinic Uninhibited | ■ Texol Powertex PI-20
Spec: IEC 296
Type: Paraffinic Inhibited |
| ■ Texol Powertex PU-60
Spec: IEC 60296
Type: Paraffinic Uninhibited | ■ Texol Powertex PI-60
Spec: IEC 60296
Type: Paraffinic Inhibited |
| ■ Texol Powertex NU-60
Spec: IEC 60296
Type: Napthenic Uninhibited | ■ Texol Powertex NI-60
Spec: IEC 60296
Type: Napthenic Inhibited |

Benefits:

- Long life.
- Better insulation properties.
- They have excellent cooling efficiency.
- Reduced corrosive Sulphur and aromatic contents.
- It can withstand extreme climatic conditions.



TEXOL POWERTEX PU-20

Specification: IEC 296

Type: Paraffinic Uninhibited

Sl. No	Characteristics	Test Method	Specification
	1-Function:		
1	Color	ASTM D 1500	----
2	Kinematic Viscosity @40°C mm ² /sec @ (-) 15°C mm ² /sec	ISO 3104 ISO 3104	Max. 16.5 Max. 800
3	Pour Point °C	ISO 3016	Max. (-) 30
4	Water Content (PPM)	IEC 60814/IEC 733	Max. 30 mg/kg for bulk supply Max. 40 mg/kg for supply in Drum
5	Breakdown Voltage	IEC 60156	Min. 30 kV as delivered Min. 50 kV after lab treatment
6	Density @20°C KG/dm ³	ISO 3675 OR ISO 12185	Max. 0.895
7	Density @29.5°C KG/dm ³	ISO 3675 OR ISO 12185	---
8	Dielectric Dissipation Factor @ 90°C & 40 to 60 Hz	IEC 60247 OR IEC 61620/IEC 247	Max. 0.005
9	Particle Content	ISO 60970	No General Requirement
	2-Refining/ Stability:		
10	Appearance	VISUAL	Clear, free from sediment & suspended matter
11	Acidity	IEC 62021-1 OR IEC62021-2	Max. 0.01 mg KOH/gm
12	Inter Facial Tension MN/m	EN 14210 OR ASTM D971	Min. 40
13	Total Sulphur Content	IP 373 OR ISO 14596	No General Requirement
14	Corrosive Sulphur	DIN 51353	Non Corrosive
15	Potentially Corrosive Sulphur	IEC 62535	Non Corrosive
16	DBDS (Dibenzyl disulphide) mg/kg	IEC 62697	Not Detectable(<5mg/kg)
17	Inhibitors of IEC 60666	IEC 60666	Uninhibited Oil; Not Detectable (<0.01%)
18	Metal Passivator Additives mg/kg	IEC 60666	Not Detectable
19	Other Additives	---	---
20	2 Furfural Content mg/kg/gm	IEC 61198	Not Detectable
21	Stray Gassing	See 6.22	No General Requirement
	3-Performance:		
22	Oxidation Stability @120°C, 164 Hrs A) Total Acidity mg KOH /gm B) Sludge % C) DDF @ 90°C	IEC 61125:1992 (METHOD C) TEST DURATION; UNINHIBITED OIL: 164 Hrs 1.9.4 of IEC 61125:1992 1.9.1 of IEC 61125:1992 1.9.6 Of IEC 61125:1992 Amendment 1(2004) +IEC 60247	Max. 1.2 Max. 0.8 Max. 0.5
23	Gassing Tendency	IEC60628:1985, METHOD A	No General Requirement
24	ECT		No General Requirement
	4- Health, Safety and Environment:		
25	Flash Point	ISO 2719	Min. 140°C
26	PCA Content %	BS 2000 PART 346	Max. 3.0%
27	PCB Content mg/kg/gm	IEC 61619	Not Detectable

TEXOL POWERTEX PI-20

Specification: IEC 296

Type: Paraffinic Inhibited

Sl. No	Characteristics	Test Method	Specification
	1-Function:		
1	Color	ASTM D 1500	----
2	Kinematic Viscosity @40°C mm ² /sec @ (-) 15°C mm ² /sec	ISO 3104 ISO 3104	Max. 16.5 Max. 800
3	Pour Point °C	ISO 3016	Max. (-) 30
4	Water Content (PPM)	IEC 60814	Max. 30 mg/kg for bulk supply Max. 40 mg/kg for supply in Drum
5	Breakdown Voltage	IEC 60156	Min. 30 kV as delivered Min. 50 kV after lab treatment
6	Density @20°C KG/dm ³	ISO 3675 OR ISO 12185	Max. 0.895
7	Density @29.5°C KG/dm ³	ISO 3675 OR ISO 12185	---
8	Dielectric Dissipation Factor @ 90°C & 40 to 60 Hz	IEC 60247 OR IEC 61620	Max. 0.005
9	Particle Content	ISO 60970	No General Requirement
	2-Refining/ Stability:		
10	Appearance	VISUAL	Clear, free from sediment & suspended matter
11	Acidity	IEC 62021-1 OR IEC62021-2	Max. 0.01 mg KOH/gm
12	Inter Facial Tension MN/m	EN 14210 OR ASTM D971	Min. 40
13	Total Sulphur Content	IP 373 OR ISO 14596	No General Requirement
14	Corrosive Sulphur	DIN 51353	Non Corrosive
15	Potentially Corrosive Sulphur	IEC 62535	Non Corrosive
16	DBDS (Dibenzylsulphide) mg/kg	IEC 62697	Not Detectable(<5mg/kg)
17	Inhibitors of IEC 60666	IEC 60666	Inhibited Oil (0.08% - 0.40%)
18	Metal Passivator Additives mg/kg	IEC 60666	Not Detectable
19	Other Additives	---	---
20	2 Furfural Content mg/kg/gm	IEC 61198	Not Detectable
21	Stray Gassing	See 6.22	No General Requirement
	3-Performance:		
22	Oxidation Stability @120°C, 500 Hrs A) Total Acidity mg KOH /gm B) Sludge % C) DDF @ 90°C	IEC 61125:1992 (METHOD C) TEST DURATION; INHIBITED OIL: 500 Hrs 1.9.4 of IEC 61125:1992 1.9.1 of IEC 61125:1992 1.9.6 Of IEC 61125:1992 Amendment 1(2004) +IEC 60247	Max. 1.2 Max. 0.8 Max. 0.5
23	Gassing Tendency	IEC60628:1985, METHOD A	No General Requirement
24	ECT		No General Requirement
	4- Health, Safety and Environment:		
25	Flash Point	ISO 2719	Min. 140°C
26	PCA Content %	BS 2000 PART 346	Max. 3.0%
27	PCB Content mg/kg/gm	IEC 61619	Not Detectable

TEXOL POWERTEX PU-60

Specification: IEC 60296: 2020 Edition 5.0

Type: Paraffinic Uninhibited

Characteristics		Test Method	Specification
	1-Function:		
1	Color	ISO 2049	Max. 1.5
2	Kinematic Viscosity @40 °C mm ² /sec @ (-) 30°C mm ² /sec	ISO 3104 ISO 3104	Max. 12 Max. 1800
3	Pour Point °C	ISO 3016	Max. (-) 40
4	Water Content (PPM)	IEC 60814	Max. 30 mg/kg for bulk supply Max. 40 mg/kg for supply in Drum
5	Breakdown Voltage	IEC 60156	Min. 30 kV as delivered Min. 70 kV after lab treatment
6	Density @20°C KG/dm ³	ISO 3675 OR ISO 12185	Max. 0.895
7	Density @29.5C KG/dm ³	ISO 3675 OR ISO 12185	---
8	Dielectric Dissipation Factor @ 90°C & 40 to 60 Hz	IEC 60247 OR IEC 61620	Max. 0.005
9	Particle Content	ISO 60970	No General Requirement
	2-Refining/ Stability:		
10	Appearance	VISUAL	Clear, free from sediment & Suspended matter
11	Acidity	IEC 62021-1 OR IEC62021-2	Max. 0.01 mg KOH/gm
12	Inter Facial Tension MN/m	EN 14210 OR ASTM D971	Min. 40
13	Total Sulphur Content	IP 373 OR ISO 14596	No General Requirement
14	Corrosive Sulphur	DIN 51353	Non Corrosive
15	Potentially Corrosive Sulphur	IEC 62535	Non Corrosive
16	DBDS(Dibenzylsulphide) mg/kg	IEC 62697	Not Detectable(<5mg/kg)
17	Inhibitors of IEC 60666	IEC 60666	(U) Uninhibited Oil; Not Detectable (<0.01%)
18	Metal Passivator Additives mg/kg	IEC 60666	Not Detectable
19	Other Additives	---	---
20	2 Furfural Content mg/kg/gm	IEC 61198	Not Detectable
	3-Performance:		
21	Oxidation Stability @120°C, 164 Hrs	IEC-61125 TEST DURATION; UNINHIBITED OIL: 164 Hrs	
	A) Total Acidity mg KOH /gm	4.8.4 of IEC 61125:2018	Max. 1.2
	B) Sludge %	4.8.1 of IEC 61125:2018	Max. 0.8 %
	C) DDF @ 90 °C	4.8.5 Of IEC 61125:2018	Max. 0.5
22	Gassing Tendency	IEC60628:1985, METHOD A	No General Requirement
23	ECT		No General Requirement
	4- Health, Safety and Environment:		
24	Flash Point	ISO 2719	Min. 135°C
25	PCA Content %	BS-2000 PART 346	Max. 3.0%
26	PCB Content mg/kg/gm	IEC-61619	Not Detectable

TEXOL POWERTEX PI-60

Specification: IEC 60296: 2020 Edition 5.0

Type: Paraffinic Inhibited

	Characteristics	Test Method	Specification
	1-Function:		
1	Color	ISO 2049	Max. 1.5
2	Kinematic Viscosity @40 °C mm ² /sec @ (-) 30°C mm ² /sec	ISO 3104 ISO 3104	Max. 12 Max. 1800
3	Pour Point °C	ISO 3016	Max. (-) 40
4	Water Content (PPM)	IEC 60814	Max. 30 mg/kg for bulk supply Max. 40 mg/kg for supply in Drum
5	Breakdown Voltage	IEC 60156	Min. 30 kV as delivered Min. 70 kV after lab treatment
6	Density @20°C KG/dm ³	ISO 3675 OR ISO 12185	Max. 0.895
7	Density @29.5C KG/dm ³	ISO 3675 OR ISO 12185	---
8	Dielectric Dissipation Factor @ 90°C & 40 to 60 Hz	IEC 60247 OR IEC 61620	Max. 0.005
9	Particle Content	ISO 60970	No General Requirement
	2-Refining/ Stability:		
10	Appearance	VISUAL	Clear, free from sediment & Suspended matter
11	Acidity	IEC 62021-1 OR IEC 62021-2	Max. 0.01 mg KOH/gm
12	Inter Facial Tension MN/m	EN 14210 OR ASTM D971	Min. 40
13	Total Sulphur Content	IP 373 OR ISO 14596	No General Requirement
14	Corrosive Sulphur	DIN 51353	Non Corrosive
15	Potentially Corrosive Sulphur	IEC 62535	Non Corrosive
16	DBDS(Dibenzylidisedisulphide) mg/kg	IEC 62697	Not Detectable(<5mg/kg)
17	Inhibitors of IEC 60666	IEC 60666	Inhibited Oil; (0.08% to 0.4%)
18	Metal Passivator Additives mg/kg	IEC 60666	Not Detectable (<5 mg/kg)
19	Other Additives	---	---
20	2 Furfural Content mg/kg/gm	IEC 61198	Not Detectable (<0.05 mg/kg)
	3-Performance:		
21	Oxidation Stability @120°C, 500 Hrs	IEC-61125 TEST DURATION; INHIBITED OIL: 500 Hrs	
	A) Total Acidity mg KOH /gm	4.8.4 of IEC 61125:2018	Max. 1.2
	B) Sludge %	4.8.1 of IEC 61125:2018	Max. 0.8
	C) DDF @ 90 °C	4.8.5 of IEC 61125:2018	Max. 0.5
22	Gassing Tendency	IEC60628:1985, METHOD A	No General Requirement
23	ECT		No General Requirement
	4- Health, Safety and Environment:		
24	Flash Point	ISO 2719	Min. 135°C
25	PCA Content %	BS-2000 PART 346	Max. 3.0%
26	PCB Content mg/kg/gm	IEC-61619	Not Detectable

TEXOL POWERTEX NU-60

Specification: IEC 60296: 2020 Edition 5.0

Type: Napthenic Uninhibited

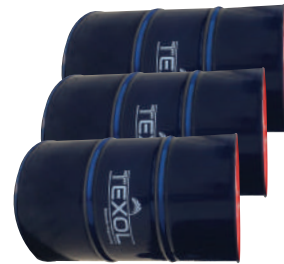
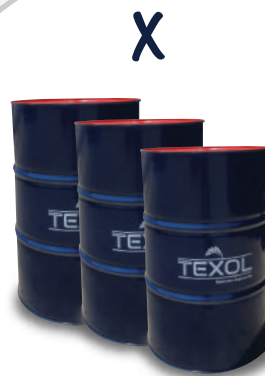
	Characteristics	Test Method	Specification
	1-Function:		
1	Color	ISO 2049	Max. 1.5
2	Kinematic Viscosity @40 °C mm ² /sec @ (-) 30°C mm ² /sec	ISO 3104 ISO 3104	Max. 12 Max. 1800
3	Pour Point °C	ISO 3016	Max. (-) 40
4	Water Content (PPM)	IEC 60814	Max. 30 mg/kg for bulk supply Max. 40 mg/kg for supply in Drum
5	Breakdown Voltage	IEC 60156	Min. 30 kV as delivered Min. 70 kV after lab treatment
6	Density @20°C KG/dm ³	ISO 3675 OR ISO 12185	Max. 0.895
7	Density @29.5C KG/dm ³	ISO 3675 OR ISO 12185	---
8	Dielectric Dissipation Factor @ 90°C & 40 to 60 Hz	IEC 60247 OR IEC 61620	Max. 0.005
9	Particle Content	ISO 60970	No General Requirement
	2-Refining/ Stability:		
10	Appearance	VISUAL	Clear, free from sediment & Suspended matter
11	Acidity	IEC 62021-1 OR IEC62021-2	Max. 0.01 mg KOH/gm
12	Inter Facial Tension MN/m	EN 14210 OR ASTM D971	Min. 40
13	Total Sulphur Content	IP 373 OR ISO 14596	No General Requirement
14	Corrosive Sulphur	DIN 51353	Non Corrosive
15	Potentially Corrosive Sulphur	IEC 62535	Non Corrosive
16	DBDS(Dibenzylsulphide) mg/kg	IEC 62697	Not Detectable(<5mg/kg)
17	Inhibitors of IEC 60666	IEC 60666	(U) Uninhibited Oil; Not Detectable (<0.01%)
18	Metal Passivator Additives mg/kg	IEC 60666	Not Detectable
19	Other Additives	---	---
20	2 Furfural Content mg/kg/gm	IEC 61198	Not Detectable
	3-Performance:		
21	Oxidation Stability @120°C, 164 HRS	IEC-61125 TEST DURATION; UNINHIBITED OIL: 164 Hrs	
	A) Total Acidity mg KOH /gm	4.8.4 of IEC 61125:2018	Max. 1.2
	B) Sludge %	4.8.1 of IEC 61125:2018	Max. 0.8
	C) DDF @ 90 °C	4.8.5 Of IEC 61125:2018	Max. 0.5
22	Gassing Tendency	IEC60628:1985, METHOD A	No General Requirement
23	ECT		No General Requirement
	4- Health, Safety and Environment:		
24	Flash Point	ISO 2719	Min. 135°C
25	PCA Content %	BS-2000 PART 346	Max. 3 .0%
26	PCB Content mg/kg/gm	IEC-61619	Not Detectable

TEXOL POWERTEX NI-60

Specification: IEC 60296: 2020 Edition 5.0

Type: Napthenic Inhibited

	Characteristics	Test Method	Specification
	1-Function:		
1	Color	ISO 2049	Max. 1.5
2	Kinematic Viscosity @40 °C mm ² /sec @ (-) 30°C mm ² /sec	ISO 3104 ISO 3104	Max. 12 Max. 1800
3	Pour Point °C	ISO 3016	Max. (-) 40
4	Water Content (PPM)	IEC 60814	Max. 30 mg/kg for bulk supply Max. 40 mg/kg for supply in Drum
5	Breakdown Voltage	IEC 60156	Min. 30 kV as delivered Min. 70 kV after lab treatment
6	Density @20°C KG/dm ³	ISO 3675 OR ISO 12185	Max. 0.895
7	Density @29.5C KG/dm ³	ISO 3675 OR ISO 12185	---
8	Dielectric Dissipation Factor @ 90°C & 40 to 60 Hz	IEC 60247 OR IEC 61620	Max. 0.005
9	Particle Content	ISO 60970	No General Requirement
	2-Refining/ Stability:		
10	Appearance	VISUAL	Clear, free from sediment & Suspended matter
11	Acidity	IEC 62021-1 OR IEC 62021-2	Max. 0.01 mg KOH/gm
12	Inter Facial Tension MN/m	EN 14210 OR ASTM D971	Min. 40
13	Total Sulphur Content	IP 373 OR ISO 14596	No General Requirement
14	Corrosive Sulphur	DIN 51353	Non Corrosive
15	Potentially Corrosive Sulphur	IEC 62535	Non Corrosive
16	DBDS(Dibenzylsulphide) mg/kg	IEC 62697	Not Detectable(<5mg/kg)
17	Inhibitors of IEC 60666	IEC 60666	Inhibited Oil; (0.08% to 0.4%)
18	Metal Passivator Additives mg/kg	IEC 60666	Not Detectable (<5 mg/kg)
19	Other Additives	---	---
20	2 Furfural Content mg/kg/gm	IEC 61198	Not Detectable (<0.05 mg/kg)
	3-Performance:		
21	Oxidation Stability @120°C, 500 Hrs	IEC-61125 TEST DURATION; INHIBITED OIL: 500 Hrs	
	A) Total Acidity mg KOH /gm	4.8.4 of IEC 61125:2018	Max. 1.2
	B) Sludge %	4.8.1 of IEC 61125:2018	Max. 0.8
	C) DDF @ 90 °C	4.8.5 of IEC 61125:2018	Max. 0.5
22	Gassing Tendency	IEC60628:1985, METHOD A	No General Requirement
23	ECT		No General Requirement
	4- Health, Safety and Environment:		
24	Flash Point	ISO 2719	Min. 135°C
25	PCA Content %	BS-2000 PART 346	Max. 3.0%
26	PCB Content mg/kg/gm	IEC-61619	Not Detectable



STORAGE

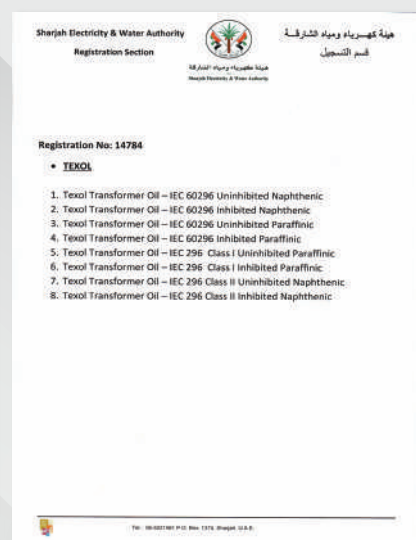
- Drums to be placed in 3 o'clock and 9 o'clock position only for long term storage.
- Drums should be kept airtight and should be opened only at the time of filling the transformers and other equipment's.
- Drums should not be opened for the purpose of sampling as nitrogen filled in the drum will leak out and air will enter, thereby attracting moisture which could degrade the transformer oil.

HANDLING

- Exposure to air, sunlight & moisture to be avoided as this can influence measurement results.
- The sampling from electrical equipment should preferably take place in the warm condition while the equipment is operating, or shortly after shutdown. This requirement is particularly necessary if breakdown voltage or water content is to be checked.
- Oil sample is to be taken where the liquid is likely to be most contaminated, usually at the lowest point of the container holding it.
- To avoid condensation, the sampling equipment shall be warmed so as to be above the ambient air temperature.

TEXOL APPROVALS AND CREDENTIALS

TEXOL Plant is ISO 9001:2015, 14001:2015, 45001:2018 certified



TEXOL LABORATORY

- Texol Laboratory is the heart of our plant.
- Covering an area of 3,200 sq.ft., our lab will be one of the best laboratories in UAE.
- We have obtained ISO/IEC 17025 Accreditation for our laboratory.





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