




# PETRO ARIA ZANGAN CO.



- Transformer oil producer
  - Importer of oil tester
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Based on the experience gained by the company's founder since 1998 about transformers and electrical insulators, the construction of the transformer oil processing and refining unit and the transformer repair and service operations began in 2004.

The company's greatest honor is activity based on the knowledge of the day and complete dominance on both topics of electricity and chemistry.

Petro Aria is established in Noavaran industrial part, Zanjan, which has served the power industry and factories in Iran and abroad for many years.

The company has now been able to carry out its duties regarding transformer oil production and repair and power plant repair on the basis of research-based knowledge and machinery. During these years, even one case of dissatisfaction and burning of the transformer has not been reported.

Our honors are honest service and free consultation to industrialists and industrial users.



## Transformer oil deterioration factor:

- .Penetration of humidity and water
- .High and severe temperatures
- .Oxidation and acidification of oil
- .Intake of suspended particles and impurities in oil



## Analysis of Petro Aria Zangan's Products

Pasdiv 30			
Property	Test method	limits	Our result
<b>1- Function</b>			
Viscosity at 40 °C	ISO 3104	Max. 16.5 mm <sup>2</sup> /s	10 - 12
Pour point	ISO 3016	Max. -30 °C	-30
Water content	IEC 60814	Max. 40 mg/kg	20 - 30
Breakdown voltage	IEC 60156	Min. 30 kV / 70 kV	35 - 75
Density at 20 °C	ISO 12185 or ISO 3675	Max. 0.895 g/ml	0.855
DDF at 90 °C	IEC 60247 or IEC 61620	Max. 0.005	0.0005
<b>2- Refining/ stability</b>			
Colour	ISO 2049	Max. 1.5	1
Appearance	-	Clear, free from sediment and suspended matter	Clear, free from sediment and suspended matter
Acidity	IEC 62021-2 or 62021-1	Max. 0.01 mg/KOH/g	0.01
Antioxidant additive	IEC 60666	Uninhabited oil: Not detectable	Uninhabited oil: Not detectable
Corrosive Sulphur	DIN 51353	Not corrosive	Not corrosive
<b>3- Performance</b>			
Oxidation stability	IEC 61125 Test duration Uninhabited oil: 164 h	For oils with other antioxidant additives and metal passivator additives	-
Total acidity	4.8.4 of IEC 61125:2018	Max. 1.2 mg KOH/g	0.4
Sludge	-	Max. 0.1 %	0.05
<b>4- Health, safety and environment (HSE)</b>			
Flash point	ISO 2719	Min. 135 °C	140



## Analysis of Petro Aria Zangan's Products

Pasdiv 40			
Property	Test method	limits	Our result
<b>1- Function</b>			
Viscosity at 40 °C	ISO 3104 or ASTM D7042	Max. 12 mm <sup>2</sup> /s	11.2
Viscosity at -30 °C	ISO 3104 or ASTM D7042	Max. 1800 mm <sup>2</sup> /s	1800
Pour point	ISO 3016	Max. -40 °C	-42
Water content	IEC 60814	Max. 40 mg/kg	15-25
Breakdown voltage	IEC 60156	Min. 30 kV / 70 kV	40-80
Density at 20 °C	ISO 12185 or ISO 3675 or ASTM D7042	Max. 0.895 g/ml	0.86
DDF at 90 °C	IEC 60247 or IEC 61620	Max. 0.005	0.0005
<b>2- Refining/ stability</b>			
Colour	ISO 2049	Max. 1.5	1
Appearance	-	Clear, free from sediment and suspended matter	Clear, free from sediment and suspended matter
Acidity	IEC 62021-2 or 62021-1	Max. 0.01 mg/KOH/g	0.01
Antioxidant additive	IEC 60666	Uninhabited oil: Not detectable	Uninhabited oil: Not detectable
Corrosive Sulphur	DIN 51353	Not corrosive	Not corrosive
<b>3- Performance</b>			
Oxidation stability	IEC 61125 Test duration Uninhabited oil: 164 h	For oils with other antioxidant additives and metal passivator additives	-
Total acidity	4.8.4 of IEC 61125:2018	Max. 1.2 mg KOH/g	0.8
Sludge	4.8.1 of IEC 61125:2018	Max. 0.8 %	0.5
<b>4- Health, safety and environment (HSE)</b>			
Flash point	ISO 2719	Min. 135 °C	140
PCB content	IEC61619	Not detectable (< 2 mg/kg)	Not detectable



## Analysis of Petro Aria Zangan's Products

Pasdiv 50			
Property	Test method	limits	Our result
<b>1- Function</b>			
Viscosity at 40 °C	ISO 3104 or ASTM D7042	Max. 12 mm <sup>2</sup> /s	9.45
Viscosity at -30 °C	ISO 3104 or ASTM D7042	Max. 1800 mm <sup>2</sup> /s	-
Pour point	ISO 3016	Max. -40 °C	-50
Water content	IEC 60814	Max. 40 mg/kg	10 - 20
Breakdown voltage	IEC 60156	Min. 30 kV / 70 kV	40 - 80
Density at 20 °C	ISO 12185 or ISO 3675 or ASTM D7042	Max. 0.895 g/ml	0.860
DDF at 90 °C	IEC 60247 or IEC 61620	Max. 0.005	0.0005
<b>2- Refinishing/ stability</b>			
Colour	ISO 2049	I.0.5(less than 0.5)	0.5
Appearance	-	Clear, free from sediment and suspended matter	Clear, free from sediment and suspended matter
Acidity	IEC 62021-2 or 62021-1	Max. 0.01 mg/KOH/g	0.01
Corrosive Sulphur	DIN 51353	Not corrosive	Not corrosive
Antioxidant additive	IEC 666	Uninhibited oil: not detectable	Uninhibited oil: not detectable
<b>3- Performance</b>			
Oxidation stability	IEC 61125 Test duration Uninhabited oil: 164 h	For oils with other antioxidant additives and metal passivator additives	-
Total acidity	4.8.4 of IEC 61125:2018	Max. 0.3 mg KOH/g	0.3
Sludge	4.8.1 of IEC 61125:2018	Max. 0.05 %	0.05
<b>4- Health, safety and environment (HSE)</b>			
Flash point	ISO 2719	Min. 135 °C	135
PCB content	IEC61619	Not detectable (< 2 mg/kg)	Not detectable



## Analysis of Petro Aria Zangan's Products

Pasdiv 60		
Property	Test method	limits
<b>1- Function</b>		
Viscosity at 40 °C	ISO 3104 or ASTM D7042	Max. 3.5 mm <sup>2</sup> /s
Viscosity at -40 °C	IEC 61868	Max. 400 mm <sup>2</sup> /s
Pour point	ISO 3016	Max. -60 °C
Water content	IEC 60814	Max. 40 mg/kg
Breakdown voltage	IEC 60156	Min. 30 kV / 70 kV
Density at 20 °C	ISO 12185 or ISO 3675 or ASTM D7042	Max. 0.895 g/ml
DDF at 90 °C	IEC 60247 or IEC 61620	Max. 0.005
<b>2- Refining/ stability</b>		
Colour	ISO 2049	L0.5(less than 0.5)
Appearance	-	Clear, free from sediment and suspended matter
Acidity	IEC 62021-2 or 62021-1	Max. 0.01 mg/KOH/g
Interfacial tension	IEC 62961 or ASTM D971	Min. 43 mN/m
Total Sulphur content	ISO 14596 or ISO 8754	Max. 0.05%
Corrosive Sulphur	DIN 51353	Not corrosive
Inhibitors of IEC 60666	IEC 60666	Inhabited oil (I): 0.08 % to 0.40 %
<b>3- Performance</b>		
Oxidation stability	IEC 61125 Test duration (U) Uninhabited oil: 164 h (T) Trace inhibited oil: 332 h (I) Inhabited oil: 500 h	For oils with other antioxidant additives and metal passivator additives
Total acidity	4.8.4 of IEC 61125:2018	Max. 0.3 mg KOH/g
Sludge	4.8.1 of IEC 61125:2018	Max. 0.05 %
<b>4- Health, safety and environment (HSE)</b>		
Flash point	ISO 2719	Min. 100 °C
PCB content	IEC61619	Not detectable (< 2 mg/kg)





### Laboratory

The laboratory of Petro Aria Co. can carry out all transformer oil tests.

Having equipped the laboratory with the best devices made in leading countries of the industry, the company has been able to have one of the most valid transformer oil test laboratories.







Pour Point



Tang



Circole



Tang



Flash Point



Insulating Oil Tester



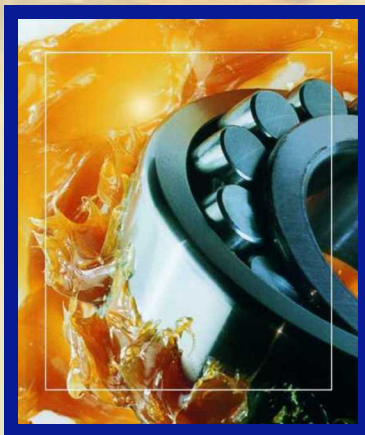
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### Oil testers

Petro Aria Company is an importer of specialized laboratory testers of transformer oil, industrial oils, transformer, and other specialized laboratory devices.



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