

8 TRANSFORMER OIL

8.1 "SHELL", Germany – Shell Diala DX

Certificat of producer

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Datum Date	Izradio Designed	Odobrio Approved	Pror. Rev.
VIII 2005.	ing. Tasiak <i>Tasiak</i>	mr. Biloš <i>Biloš</i>	



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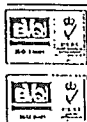
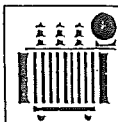
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MANUFACTURE: SHELL - GERMANY

TYPE: SHELL DIALA DX

DOCUMENTATION: Certificat of producer (3 pages)

Datum Date	Izradio Designed	Odobrio Approved	Promjena Revision
XII 2004.	ing. Taslak <i>Taslak</i>	mr. <i>Stoš</i>	



Shell Diala Oil DX

High performance insulating oil



Shell Diala DX is a top-tier inhibited insulating oil manufactured from specially refined high naphthenic feedstock. It offers very high oxidation stability, good dielectric strength and excellent low temperature properties without the use of pour point depressants.

Applications

- **Industrial transformers**
Electrical insulating oil for transformers and switch-gears.
Grid and Industrial transformers up to maximum load.
- **Electrical equipment**
Components like rectifiers, circuit breakers, switch-gears.

Advice on applications not covered in this leaflet may be obtained from your Shell Representative.

Performance Features and Advantages

- **Excellent oxidation stability**
Diala DX is offering inherent resistance to oil degradation. A proven oxidation inhibitor enables outstanding product life.
It is designed to perform as fill-for-life oil filling in transformers.
- **Very good dielectric strength**
It clearly exceeds the requirements from all major specifications.
- **Very good low temperature properties**
The high naphthenic nature of the feedstock of Diala DX provides a superior low temperature performance without adding any additives.
- **Very good heat transfer characteristics**
The very good fluidity of the oil is securing a proper heat transfer inside the transformer even from lowest starting temperatures on.

Specification and Approvals

Shell Diala DX meets the following specifications:

DIN 57370-1

IEC 60296-2003; Higher oxidation stability and low sulphur content

Storage precautions

The critical electrical properties of Shell Diala DX are easily compromised by trace contamination with foreign material. Typically encountered contaminants include moisture, particles, fibers and surfactants. Therefore, it is imperative that electrical insulating oils be kept clean and dry. It is strongly recommended that storage containers be dedicated for electrical service and include air-tight seals. It is further recommended that electrical insulating oils be stored indoors in climate-controlled environments.

Health and Safety

Guidance on Health and Safety are available on the appropriate Material Safety Data Sheet which can be obtained from your Shell representative.

Shell Diala DX is free of polychlorinated biphenyls (PCB).

Protect the environment

Take used oil to an authorized collection point. Do not discharge into drains, soil or water.

Shell Deutschland Oil GmbH
Elbe Mineralölwerke, Worthdamm 32, D-20457 Hamburg

Service references: -, C.Stockhausen, +49/40/78108 233



Specific test report
conforms with EN 10204-"2.3"

Shell Deutschland Oil GmbH, Worthdamm 32, D-20457 Hamburg

SHELL D.O.O. ZAGREB
Aleksandra Honda 2

date : 30.11.2004

41000 ZAGREB
Croatia

SHELL ZAGREB-VELIKA GORICA-WAREHOUS
ASTRA
ZAGREB-ZITNJAK
10000 ZAGREB
Croatia

grade : SHELL DIALA DX / road-tankcar
blend batch : DE30388736
fill batch : DE40581052
delivery / pos. : 0757004492 / 000010
indent no. : L4435/1
vehicle no. : BJ 797AH;ZG 4391 AF
quantity (kg) : 19980

date of loading: 30.11.2004

test	unit	method	result
Colour in 15 mm layer	Farbzahl	VDEW-Ölfarbskala	< 1,0
Appearance	-	IEC 60296	c & b
Density 20°C	kg/m³	DIN EN ISO 12185	877,2
Kin. viscosity 40°C	mm²/s	DIN EN ISO 3104	8,018
Kin. viscosity -30°C	mm²/s	DIN EN ISO 3104	737
Flash point closed P.M.	°C	DIN EN ISO 2719	139
Oxidation inhibitor content	Gew.-%		0,30
Corrosive sulphur	-	DIN 51353	non-corr.
Neutralisation value	mg KOH/g	DIN 51558-2	< 0,01
Breakdown voltage	kV	DIN EN 60156	> 30
Breakdown voltage treated	kV	DIN EN 60156	75
Dielectric dissipation factor 90°C	ohne	DIN 57370-1	0,0003



Type and quantity of additives : phenol oxidation inhibitor 0,3%

The oil supplied complies with the specification DIN 57370, Part 1 / VDE 0370, Part 1 / IEC 60296. The values given, have been measured at samples of the oil supplied.

Shell Electrical oils are made from virgin base oils and are therefore free of PCB.

Laboratory
Albertz

We confirm that the delivered product fulfills the agreed specification.

The data in this certificate of analysis is obtained from measurements, which are based on specified testing procedures of the batches from which you are delivered. However, this does not release you from your obligation to test and check the products for your individual purpose and use. This certificate has been validated by electronic dataprocessing and is therefore not signed.