
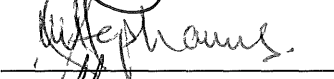
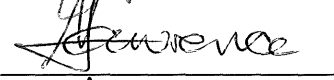
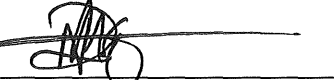
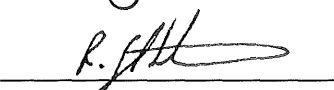
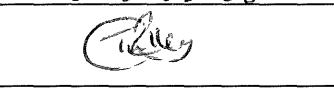


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**ESKOM**  
**KOEBERG NUCLEAR POWER STATION**  
**DESIGN ENGINEERING**

Specification Title

**ANTI-FREEZE/RADIATOR COOLANT**

<b>CO-PREPARED BY:</b>		<b>X BOOI</b>
<b>PREPARED BY:</b>		<b>AM STEPHANUS</b>
<b>REVIEWED BY:</b>		<b>AR LAWRENCE</b>
<b>REVIEWED BY:</b>		<b>N MSUMZA (CHEMISTRY)</b>
<b>APPROVED BY:</b>		<b>R GOLDSTEIN</b>
<b>DATE:</b>	<u>2012-06-08</u>	
<b>DATA CAPTURED:</b>		<b>C TULLEY</b>

<b>Reference</b>	<b>Rev</b>	<b>Page</b>
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**KOEBERG NUCLEAR POWER STATION  
NUCLEAR ENGINEERING**

	<b>APPROVED: A DIMOND</b>	<b>DATE: 1990-06-07</b>
<b>REVISION</b>	<b>PREPARED BY</b>	<b>REVIEWED BY</b>
0	A VON ALLEMANN	DC EVANS
1	DC EVANS	L ATA
2	X BOOI/AM STEPHANUS	AR LAWRENCE/N MSUMZA

**RECORD OF REVISIONS**

<b>Rev</b>	<b>Date</b>	<b>Description of Revision</b>	<b>Prep.</b>	<b>Rev.</b>	<b>Appr.</b>
0	1990-06-07	Original	AvA	DCE	AD
1	1996-03-07	Shell 2-in-1 anti-freeze changed to Shell Tri-guard anti-freeze	DCE	LA	GS
2	2012-05-25	Catalogue specification changed to a generic specification	XB/AMS	ARL/NM	RG

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**ESKOM**

**KOEBERG NUCLEAR POWER STATION**

**PROCUREMENT SPECIFICATION**

**PRODUCT: ANTI-FREEZE/RADIATOR COOLANT**

**TECHNICAL DESCRIPTION: ANTI-FREEZE/RADIATOR COOLANT WITH THE FOLLOWING SPECIFICATIONS:**

Chemical composition	:	Ethylene glycol (100%)
Operating temperature	:	-3.2 to 82°C
pH value @25°C	:	7.5 to 9.0
Solubility	:	Miscible
Colour	:	Green
Chloride content	:	< 50 ppm
Iron content	:	< 250 ppb
Copper content	:	< 250 ppb
Zinc content	:	< 100 ppb

**CLASSIFICATION:**

CLASSIFICATION No.	:	0011/12C
SAFETY	:	LS
SEISMIC	:	NC
QUALITY	:	Q3
ENVIRONMENTAL	:	NEV

**PACKAGING:**

Standard Commercial Grade

**IDENTIFICATION OF PRODUCT:**

Each package is to be marked with:

1. General description of package content.
2. Manufacturer's name and product part/model numbers.
3. ESKOM's SAP number (if applicable).
4. ESKOM's order number.

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**CERTIFICATION:**

The Manufacturer/Supplier to complete an Eskom (Koeberg) CERTIFICATE OF CONFORMANCE (C.O.C) certifying that the product supplied meets the requirements of this specification.

\*A CERTIFICATE OF ANALYSIS (C.O.A) must be included with each batch.

**QUALITY ASSURANCE**

Procurement Quality requirements shall be specified in the enquiry, contract or order documentation.


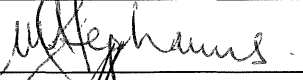
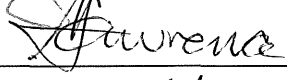
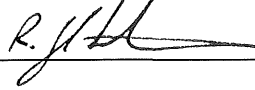

*Full details of all deviations from this Specification must be submitted to ESKOM (KOEBERG) in writing for clearance prior to manufacture/despatch of the product.*

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**ESKOM**  
**KOEBERG NUCLEAR POWER STATION**  
**SPECIFICATIONS ENGINEERING**

Specification Title

***O-RING AND O-RING CORD***  
***FOR NON-PMUC/CRACK COMPLIANT APPLICATIONS***

<b>CO-PREPARED BY:</b>	 _____	<b>NNP COTHO</b>
<b>PREPARED BY:</b>	 _____	<b>AMA STEPHANUS</b>
<b>REVIEWED BY:</b>	 _____	<b>AR LAWRENCE</b>
<b>APPROVED BY:</b>	 _____	<b>R GOLDSTEIN</b>
<b>DATE:</b>	<i>2012-06-08</i> _____	
<b>DATA CAPTURED</b>	 _____	<b>C TULLEY</b>

<b>Reference</b>	<b>Rev</b>	<b>Page</b>
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## KOEBERG NUCLEAR POWER STATION

### NUCLEAR ENGINEERING

	<b>APPROVED:</b> JHE Daniels	<b>DATE:</b> 16 October 2001
<b>REVISIONS</b>	<b>PREPARED BY</b>	<b>REVIEWED BY</b>
4	JR Mellor	DC Evans
5	DC Evans	JR Mellor
6	DC Evans	JR Mellor
7	NNP Cotho/ AMA Stephanus	AR Lawrence

### RECORD OF REVISIONS

Rev	Date	Description of Revision	Prep.	Rev.	Appr.
4	16/10/01	Replace 3. EKOM's NSN number with Material number (SAP); Change first paragraph of Certification to read as follow: Manufacturer/Supplier to complete ESKOM (KOEBERG) C.O.C certifying that the product supplied meets the requirements of this specification, this certification shall also include the material compound to which the O-rings were manufactured.	JRM	DCE	JHED
5	25/08/03	Removed catalogue references off cover page. Re-word specification title – remove importance categories SR & AR. Include in certification requirements – the cure date and shelf life of the product.	DCE	JRM	ARL
6	04/11/22	Specify packaging requirements	DCE	JRM	ARL
7	2012-06-30	Reword specification title - to limit its use to non-crack compliant applications.	NNPC/ AMAS	ARL	RG

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## ESKOM

### KOEBERG NUCLEAR POWER STATION

#### PROCUREMENT SPECIFICATION

**PRODUCT:** O-RINGS AND O-RING CORD

**TECHNICAL DESCRIPTION:** O-RINGS AND O-RING CORD, AS SPECIFIED IN ESKOM PURCHASE ORDER.

**Note for Internal Use Only:** This specification shall be used for the procurement of Non-PMUC / CRACK O-RINGS and O-RING CORD.

#### PACKAGING:

O-rings to be individually packaged in hermetically sealed UV resistant materials and shall conform to the requirements of ASME NQA-1 Subpart 2.2.

#### IDENTIFICATION OF PRODUCT:

Each package is to be marked with:

1. Material compound, shore A hardness, batch number, shelf life and cure date.
2. O-Ring/Cord dimensions and/or part number.
3. ESKOM's Material number (SAP).
4. ESKOM's order number.
5. Manufacturers name.

#### CERTIFICATON:

Manufacturer/Supplier to complete ESKOM (KOEBERG) CERTIFICATE OF CONFORMANCE certifying that the product supplied meets the requirements of this specification. This certification shall include the material compound/hardness to which the O-rings and O-ring cords were manufactured.

Manufacturer to indicate the shelf life and cure date of the product supplied. The product cure date must not be in excess of 12 months prior to the product delivery date.

*Full details of all deviations from this specification must be submitted to ESKOM (KOEBERG) in writing for clearance prior to manufacture / dispatch of the product.*