



Integrity Testing Laboratory Inc.

80 Esna Park Drive, Units 7-9, Markham, Ontario, L3R 2R7, Canada
Tel: +1-905-415-2207; Fax: +1-905-415-3633; website: www.itlinc.com; e-mail: info@itlinc.com

An ISO 9001:2008 Company

REPORT ITL-122916-16353R

XRF RoHS SCREENING OF GAMMA-NANO SUPER ELECTRICAL INSULATION



Submitted to:

**Future Vision Technology Inc.
399 Four Valley Drive, Unit 22
Concord, ON, L4K5Y7
Canada
(Attn.: Vickie Tran)**

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Testing Engineer(s)	Stamp (s)
Per: <u> J. Kleiman </u>	ITL INC. #1
Laboratory Manager	Stamp
Per: <u> R. Ng </u>	ITL INC. QA #1
Quality Assurance	Stamp

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1.0 INTRODUCTION

This report presents the results of XRF screening for RoHS compliance of liquid Gamma-nano Super Electrical Insulation conducted by ITL Inc. on request of Future Vision Technology Inc. A can of the liquid Gamma-nano Super Electrical Insulation was submitted to ITL Inc. and a request was made to conduct RoHS screening and testing of the liquid chemical inside the can using the XRF technique. General view image of the submitted can product is presented in Table 1.

X-ray fluorescence (XRF) spectrometry technique was employed to screen the components/materials for lead (Pb), cadmium (Cd), total chromium (Cr), mercury (Hg), and total bromine (Br). A bench-top energy dispersive x-ray fluorescence spectrometer (HORIBA XGT-1000WR) was used in this investigation. The spot size of the x-ray beam that was used in this work is 1.2 mm allowing for fast and efficient analysis of very small areas. Interpretation of the results was conducted in accordance with IEC 62321-3-1 guidelines.


2.0 RESULTS AND DISCUSSION

The liquid chemical inside the Gamma-nano Super Electrical Insulation can was screened for the major RoHS constituents using XRF method. The results of the RoHS screening are presented in Table 1. Table 2 specifies the detection limits of the XRF spectrometer for the five RoHS elements.

3.0 CONCLUSIONS

As a result of conducted XRF screening it can be concluded that the liquid substance inside the Gamma-nano Super Electrical Insulation can is RoHS compliant and does not contain any detectable concentration of lead (Pb), cadmium (Cd), total chromium (Cr), mercury (Hg), and total bromine (Br).

Table 1 XRF Results: RoHS Screening Test

Photo Documentation	Material	Element	XRF Scan Results	Comments
	Liquid Chemical inside the can	Pb	BL	
		Cd	BL	
		Cr	BL	
		Hg	BL	
		Br	BL	

BL - below limit

Table 2: Detection Limits of the RoHS Elements

Detection Method	Element	Detection Limit [ppm]
XRF with reference to IEC 62321	Cd	18
	Pb	20
	Hg	12
	Br	20
	Cr	40