

Ferrochem Introduction

We are known to you as **manufacturers of products related to NDT** by **LPI and MPI** method.

Information and details about products we manufacture is as given below.

The information is for **Consumables, Accessories** and **Equipment** required now or in future.

We request you to **keep the printout in your stock**, for your ready reference.

We, FerroChem, are a manufacturing company. We manufacture Consumables, Equipment and Accessories required for NDT i.e. Non-Destructive Testing.

NDT i.e. Non-Destructive Testing is for testing of components, without destroying the components, and for conforming their ability for the use. There are various methods of NDT.

FerroChem is manufacturer of the following NDT Test products,

1. **LPI** Testing products that are for **Liquid Penetrant Inspection**, and
2. **MPI** Testing products that are for **Magnetic Particle Inspection**.

FerroChem manufactures not only the **Consumables** for NDT, but also manufactures **Equipment** and **Accessories** for NDT Testing.

FerroChem provides services related to MPI/LPI Equipment, such as **Repairs, Calibration of Equipment and Accessories**.

FerroChem offers Training as per ASTM Specification in **MT** and **PT** for level **I** and **II**.

FerroChem is company in **MIDC area at Jejuri, Pune** Maharashtra.

FerroChem is in NDT field for last **45 years**.

FerroChem is an **ISO certified** company for last **20 Years**.

FerroChem is an **NPCIL approved company** for Penetrant Consumables (LPI) for last **12 Years**.

FerroChem has more than **2000 customers** spread all over the country.

FerroChem has more than **15 Agents/Representatives** spread all over the country.

FerroChem manufactures **all Consumables, Accessories and Equipment** for MPI and LPI.

FerroChem manufactures all types of Consumables such as,

Fluorescent and Non Fluorescent, Oil Based and Water Based etc. for MPI and LPI.

FerroChem manufactures more than **200 numbers/types of products** related to NDT.

FerroChem has a specialty in respect of manufacturing products as per the convenience of the customer, which is a result of our vast experience for last 45 years in NDT field.

Please contact FerroChem for any enquiry or requirement related to NDT products.

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DYE PENETRANTS FOR CRACK DETECTION

Latest Information as on April 2022

**All Products are Approved by NPCIL and
Conform to ASTM, ASME B & PV Code Section V, ISO, and RDSO.
Aerosol Packing, Volume: 420 ml, Can Size: 65x165 mm Approximate.**



Aerosol Packing

- **FC-911/2** Penetrant (Solvent Removable)
- **FC-931/2** Penetrant (Water Washable)
- **FC-811/2** Developer
- **FC-711/2** Solvent Remover i.e. Cleaner

Non-Aerosol Packing :

- **FC-91 IHL** Penetrant (Solvent Removable)
500ml Tin Can
- **FC-93 IHL** Penetrant (Water Washable)
500ml Tin Can
- **FC-91 I5** Penetrant (Solvent Removable)
- **FC-93 I5** Penetrant (Water Washable)
- **Developer**
- FC-81 I I** Ltr. in PVC Can
- FC-81 I5** Ltr. in PVC Can
- **Cleaner i.e. Solvent Remover**
- FC-71 I I** Ltr. in PVC Can
- FC-71 I5** 5Ltr. in PVC Can



न्यूक्लियर पावर कॉर्पोरेशन ऑफ इंडिया लिमिटेड
(भारत सरकार का उद्यम)
Nuclear Power Corporation of India Limited
(A Govt. of India Enterprise)
पुणवत्ता आणविक नितेशालय
Directorate of Quality Assurance
नाशिकीय उर्जा भवन, अनुशक्ति नगर, मुंबई - 400 094
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NPICIL/QAD/Appr/DP Chemicals/2022/52

March-21, 2022

LETTER OF APPROVAL

To,

M/s FerroChem NDT Systems Pvt. Ltd.
C-98, Addl. Jejuri MIDC, Jejuri,
Taluka - Purandar, Dist.- Pune,
412303, INDIA
9272230386/30385/17690/00829
info@ferrochem.net


Sub: Brand renewal of approval of Chemicals used for Liquid Penetrant Examination (LPE).

This is to certify that following brands of chemicals used for Liquid Penetrant Examination (LPE) have been tested in accordance with the NPICIL Procedure for Approval of Chemicals used for LPE and found to be satisfactory.

S.No.	Brand name	Description
1.	FC-911, FC-811 FC-711	Solvent Removable (Visible)
2.	FC-931, FC-811	Water Washable (Visible)
3.	FC-941, FC-821	Water washable (Fluorescent)
4.	FC-921, FC-821, FC-721	Solvent removable (Fluorescent)

The above brands are approved for use on NPICIL job.

This renewal of approval is valid upto **January 2027**. Within the approval period, vendor may be subjected to periodic audit by NPICIL or his authorized personnel. Based on the performance in the audits, approval will be continued upto the validity period. This approval will also be reviewed in case any quality problem is brought to our notice.


A.K. Deshmukh
AD (QA) with ED power

Cc:

Head -RQAC, Vadodara & Dahej

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MAGNETIC POWDERS FOR CRACK DETECTION

Powders to be used for Crack Detection by Magnetic Particle Testing Method (MPI)

Wet Application MPI Powders
Fluorescent and Non-Fluorescent # Suspension Medium: Oil and Water.

Fluorescent Color: Green (134,133) and Yellow (135,131).
Product form: Powder, Paste, Liquid Concentrate and Ready Bath.

Inspection under UVA Light in Dark Room.

Oil Based, to be suspended in Oil i.e. Test Oil.			Water Based, to be suspended in Water.	
Product Code	Product Packing	Product Application.	Std. Packing	Product Features
Form	Products	Bath. (Ready to use)	Products	20 Ltr. Bath. (Ready to use)
Product Code	Product Code	Product Code	Product Code	Product Code
22041	Test Oil: 20Ltrs. Test 30A/P-4	Suspension Oil for MPI 134A/P-20	NA	Colorless i.e. Non-Fluorescent having high flash point >93°C. Packing 20 Ltrs./200 Ltrs. 133C/P-5(M/C), 133C/P-5 & 131C/P-5
Powder	135A/J-1	131A/L-1	NA	NA
Paste	NA	131A/L-1	135C/L-2	135C/L-20
LiquidCon.	NA	131A/L-1	135C/L-2	135C/L-20
Ready Bath	131A/2, 134A/2 (Aerosol Can)	NA	NA	NA

Daylight Color: Black (140,147) and Red (146).

Product form: Powder, Paste, Liquid Concentrate and Ready Bath.

Inspection in Daylight using White Light.

Form	BLACK AND RED		BLACK AND RED	
	Oil Based		Water Based	
	Suspended in Oil i.e. Test Oil		Suspended in Water.	
	Standard Packing Products	Products For 20 Ltr. Bath. (Ready to use)	Standard Packing Products	Products For 20 Ltr. Bath. (Ready to use)
	Product Code	Product Code	Product Code	Product Code
Powder	NA	NA	140C/P-71	140C/P-20, 146C/P-7
Paste	147A/J-51, 146A/J-5	147A/J-20, 146A/J-20	NA	NA
LiquidCon.	NA	NA	NA	146C/L-3
Ready Bath	147A/2 (Aerosol Can)	NA	NA	NA

White Contrast, 1204/2

White Background Color Coating on Component surfaces to facilitate Crack Detection.

Form	Standard Packing Product	Description for usage
Ready Bath	White Contrast 1204/2 (Aerosol Can)	<p>The contents of Aerosol Can, 1204/2, are White Color coatings which compose a thin film on the surface of the component. The coating dries off in a few seconds. The result is the testing surface appears White in color. The thickness of coating is so thin that in spite of the coating of the White contrast, it is easily possible to detect cracks on the surface. The White contrast helps in crack detection by its appearance.</p> <p>Coating of White color, on the surface of the component to promote crack detection in daylight or using white light. Powders to be used Black or Red.</p>

Dry Application MPI Powders

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Use Dry Powders as supplied, using a Blower.

Use of suspension medium such as "Water" and "Oil" is not required.

Post cleaning of component and repeat testing is very easy.

Color	Red	Grey	Black
Product Code	246	249	247
Std. Packing	1Kg	1Kg	1Kg

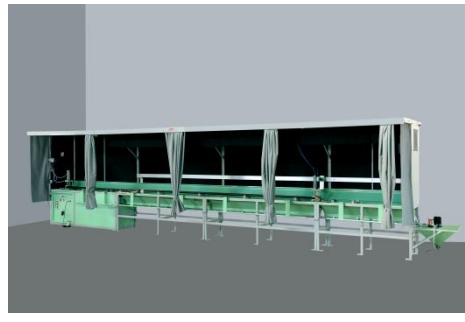
FerroChem supplies "Blowers" for spraying of Dry application Powders during Testing.

1207	MFI i.e. Magnetic Field Indicator	Instrument to Determine presence and direction of magnetic field in MPI.	Manufactured By :FerroChem, India Octagonal shaped, having 8 soft magnetic triangular pieces joined together with a Non-magnetic plate on top and a non-magnetic handle.
1238	RFI i.e. Residual Field Indicator	Instrument to Measure Residual, Magnetic Field on components in MPI, after demagnetization.	Manufactured By :FerroChem, India Residual Magnetic Field Range,-3 to+3 Gauss. Magnetic Field Range as per Standard ASTM E-1444.
312510	UVA LED Assembly	Light Source for inspection for Fluorescent Penetrant as well as MPI Powders, does not require filter and power pack.	Manufactured By :FerroChem, India Light weight with ON/OFF switch Intensity achieved immediately after switching 'ON'.
3111 3112	Copper Mesh Pads	To establish a firm contact in MPI Magnetization, between Component and Current source. Square shaped. 3111 : Single Layer 3112 : Double Layer	Manufactured By :FerroChem, India Copper Mesh pads, either Single Layer or Double Layer with size as per user's requirement.
1205	AISI KETOS Tool Steel Ring	Device for Evaluating System performance by verification in MPI. (3)1205 : For General Engineering	General Engineering Copper Conductor provided with Keto's Ring.
1229 1234	Centrifuge Tube	Glass Tube for Measuring Settling Volume of MPI Powders. 1229: For Non-Fluorescent Powder. 1234: For Fluorescent Powder.	Calibrated Glass Centrifuge Tube, 100ml capacity, with stand or without stand. 1229 Settling Volume Reading up to 2.5 ml. 1234 Settling Volume Reading up to 1ml.
363	UVA LED Torch	Light Source for inspection for Fluorescent Penetrant as well as MPI Powders.	Supplied By :FerroChem, India Intensity 10000 μ W/cm ² at 15 inch distance. Light weight, operates by rechargeable AAA cells. Stability of Intensity is approximate 2 hours.
3611-10 μ 3612-20 μ 3613-30 μ 3614-50 μ	Nickel Chrome Panel	Assessment of Penetrant Sensitivity.	Manufactured By : Eishin Kagaku Co.Ltd. Japan
362	Aluminum Comparator Block	Assessment of Testing Ability of Known Penetrant. Block has combination of both Fine and Coarse cracks	Manufactured By : Eishin Kagaku Co.Ltd. Japan. Assessment of Penetrant Sensitivity.

ACCESSORIES FOR MPI AND LPI TESTING



FERROCHEM MAKE MPI EQUIPMENTS OF VARIOUS DESIGNS



1

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3

4

1. MPI Equipment for high **testingspeed** of components of medium size. **Two auto-moving coils are provided.**
2. An MPI Equipment for testing of **Bars of length 7 meters**. Magnetization is only in longitudinal direction.
3. Portable MPI Equipment for **testing components onsite**. Useful for components of any size and shape.
4. A hand held, rotating arm magnetiser called '**Yoke**'. This is for **testing by hand** on site without an equipment.

VARIETIES OF COMPONENT THAT ARE GENERALLY USED FOR MPI TESTING



Length -50mm to 180mm
Diameter-15mm to 100mm

Length - 100mm to 675mm
Diameter- 100mm to 150mm

Length -200mm to 500mm
Diameter-150 to 250mm

Weight - 25gm to 2Kg

Weight - 10Kg to 20Kg

Weight -25gm to 10kg

Weight- 20kg to 100kg

LPI SYSTEMS OF VARIOUS DESIGNS



1

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3

- **LPI System** is provided for an organization which has to test many **Components**, i.e. in the range of **min.1000 Nos.**
- The size, shape and number of components which are to be tested, may vary as per the convenience of the user, a **standardized system** is therefore of no convenience.
- **The System should be as per size, shape and numbers of the components to be tested.**
- **The testing stations, Penetrant Application, Dwelling Station, Pre-Washing Station, Emulsification, Post Washing, Drying, Developer Application and Inspection under UVA light are essential in LPI.**
- The **design of system**, with Testing Stations, depends upon the number and **Sizes and Shapes of Components** to be tested, along with testing operations, namely **Postemulsifiable, Waterwashable, use of Dry Developer** etc.
- The **Systems in the photographs above** were manufactured as per the convenience of the customers.
- Please convey us, sizes, shapes & numbers of Components, as mentined in writeup below, which you intend to test by LPI Testing.
- We will offer a design as per your convenience and satisfaction.