

Cleaning procedure for magnet wire with ML/HML insulation

APPROVALS	DATE	REV	DCN NO.	BY	CHECK	DCC	DATE
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DCC RELEASE							

Purpose:

This procedure is to clean trace contaminants of paraffin and mineral oil from magnet wire, as a pre-cleaning procedure prior to winding bobbins. These contaminants are typically added during wire manufacture.

Materials:

- Collapsible reel and respooling fixture
- 190 mm dia x 100 mm deep glass growing dish, cleaned
- 2 liters of toluene Reagent Grade (RG)
- 2 liters of isopropyl alcohol RG grade
- Fume hood with an air flow velocity of 100 linear feet per minute (LFM) and calibrated and posted within in one year of operations (NOTE: Rev 1 required 200 LFM. Vent hoods at LHO/LLO cannot achieve this air flow rate. ANSI Z9.5 requires 100 LFM)
- Drying rack (wire mesh)
- Gloves (Nitrile gloves (Ansell 58-530) ([See Caltech ES&H Glove Guide](#)))
- Dustless wipes (Berkshire # MS1200.1212.6)
- Tongs to perform toluene washing
- Ultra-clean aluminum foil

CAUTION:

All employees using toluene shall review Safety Data Sheet (SDS) prior to working with the Toluene
Toluene is harmful if inhaled.
Do not allow solvents to come in contact with skin.
Change gloves frequently during the process to prevent glove punctures.
Wear eye protection with side shields.

This entire procedure should be done under a fume hood with a flow of 100 LFM

1. Take the wire off the shipping spool and make it into a coil of approx. 5 inches inside dia., using collapsible reel and respooling fixture (reel lined with ultra-clean foil).
2. Fill a glass growing dish about half full with toluene and place wire in dish then fill until the wire coil is completely covered with toluene. Let set for 25 min.
3. Using the provided tongs, agitate the wire in the toluene by lifting the wire out of the dish and let drain, then put the wire back in the dish with the toluene. Repeat this step at least 10 times.
4. Replace the toluene and repeat step 3, then let excess toluene drain off the wire coil.
5. Fill a growing dish half full of isopropyl alcohol and place the coil of wire in the dish. Wait 5 min.
6. Using the provided tongs, agitate the wire in the alcohol the same way as in step 3.
7. Place the coil of wire on the drying rack and let it dry overnight.
8. Wipe clean the shipping spool with isopropyl alcohol, at least twice.
9. Replace the coil on the collapsible reel (with fresh ultra-clean foil liner) and re-spool wire onto the shipping spool.



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10. Package and label spool as pre-cleaned for subsequent assembly.
11. Disposal of liquid waste and contaminated rags shall be [per LIGO - M1200015 v1, Chemical Solvents and Solvent-Contaminated Materials](#) and Caltech EH&S [Hazardous Waste Management Guide](#)