



The University of Sheffield

Risk Assessment Form

PERSONS AT RISK : (*) Employees (*) Contractors () Public (*) Visitors () Others			Reference No:	
Risk: (H) High (M) Medium (L) Low (O) No Risk.			Environment: Ground level laboratories with good access / egress	
TASK or ACTIVITY: Operation & maintenance of NMR Spectrometers up to & including 600 MHz			INITIAL RISK RATING	FINAL RISK RATING
SIGNIFICANT HAZARD	RISK		EXISTING CONTROL/PROPOSED CONTROL MEASURES	
Accidental release of significant volumes of liquid or gaseous cryogen (Helium or Nitrogen)	Asphyxiation	M	1. Adequate ventilation to eliminate the potential for asphyxiating atmosphere, OR normal ventilation PLUS oxygen deficiency sensing (see 2) 2. High / Low level oxygen deficiency sensing & alarm system installed where risk of high / low asphyxiating gas layers 3. Emergency procedure for action in event of gas alarm implemented. 4. Restricted access arrangements - trained & authorised staff only. 5. All users of NMR's to be familiar with oxygen depletion alarm system. 6. See "Comments" below for additional preventative measures.] L
Contact with liquid cryogen during refilling sequence	Cold burns to exposed skin	M	1. All operators must wear laboratory coat, suitable, dry leather gloves, eye protection, suitable leg and foot protection 2. Refilling operations must accord with Safe Operating Procedure 3. All operators to be trained in all relevant Safe Operating Procedures] L
Strong magnetic field	Injury from moving ferromagnetic objects Pacemaker failure	M	1. All operators and visitors required to remove all ferromagnetic objects prior to entry to laboratory. 2. Warning signs posted on access door to laboratory] L
Broken NMR tubes	Cuts to fingers / contamination by sample	L	1. Handle carefully / Avoid excessive force / Do not use chipped NMR tubes] L
Comments: 1. NMR Helium levels checked daily/weekly for rate of loss & deviations from normal losses.			Overall Risk:	L
2. Oxygen deficiency sensing equipment checked monthly (or as necessary) by introducing oxygen deficient source to test detection and warning systems.				
3. Oxygen deficiency sensing equipment calibrated 6 monthly to 19% oxygen concentration & new sensor installed every 12-18 months				
4. Contractor access to, and work in, NMR areas to be constantly supervised. Contractors to be made aware of risks in NMR areas.				
Additional References, Tasks etc				
1. Safe Operating Procedures for Refilling NMR unit with Liquid Helium and Liquid Nitrogen				
2. Relevant University of Sheffield documents on NMR use (e.g. "Introduction to Practical NMR Spectroscopy" by Chemistry Department)				
Undertaken By:				
Other Persons Consulted:				
Date:			Revision Date:	