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Gravity Probe B Relativity Mission

APPROVED AND RESTRICTED MATERIALS AND ACTIONS

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APPROVED AND RESTRICTED MATERIALS AND ACTIONS

1.0 SCOPE

This document covers the approved and restricted materials and actions applicable within the HEPL 130/132 clean rooms. These rules are to be followed by all users of the clean rooms, with each user responsible for monitoring his or her own compliance with described procedures.

2.0 DEFINITIONS

2.1 PROHIBITED MATERIALS - These materials are absolutely prohibited within the clean room.

2.2 PROHIBITED ACTIONS - These activities are not to be done within the clean room.

2.3 RESTRICTED MATERIALS - These require approval of the clean room manager and will be used only for the single approved use. Special restrictions or facilities may be required.

2.4 RESTRICTED ACTIONS - These require approval of the clean room manager and are permitted only for the single approved incidence.

2.5 APPROVED MATERIALS - These materials are approved for general use in the clean room in the manner for which they were approved. These are materials which have been judged to generate few particles themselves and do not cause other materials to shed particles.

2.6 APPROVED ACTIONS - These are activities approved for general use in the clean room.

2.7 CLEAN ROOM MANAGER - Person assigned as the Clean Room Manager with the responsibility for day to day management of the clean room facilities including all other responsibilities as defined in the clean room policies and procedures.

3.0 LISTS

3.1 PROHIBITED MATERIALS

- 3.1.1 Paper Items:
 - paper towels
 - tissues (other than LABEX lintfree)
 - punched cards and tape
 - cardboard
 - newsprint
 - paperbags
- 3.1.2 Natural Fibers
 - cotton
 - wool
- 3.1.3 Metals
 - cold rolled steel (unfinished)
 - zinc
 - lead
 - mercury
 - cadmium and cadmium plated
 - steel wool
- 3.1.4 General Materials
 - mica
 - asbestos
 - chalk
 - fiberglass, unsealed
 - sandpaper
 - lapping compounds
 - rouge
 - pumice
 - emery cloth
 - lead pencils
 - erasures
 - carbon paper
 - carbon typewriter and printer ribbons
 - cloth tapes, e.g. duct tape
 - unfinished wood
 - aerosol sprays, except pure Freon

3.2 PROHIBITED ACTIONS

- grinding
- filing
- lapping
- thread cutting
- sawing
- scraping
- plastering

3.3 RESTRICTED MATERIALS

books, except notebooks
brushes
carbon
cotton Q-tips
galvanized steel
magazines
open cell foams
plastics, filled
powders
rubber
Scotchbrite
unconfined lubricants
all other materials not on the approved or prohibited lists.

3.4 RESTRICTED ACTIONS

drilling
polishing
welding
soldering
tapping
deburring
riveting
conformal coating
painting
all other actions which remove material, vaporize material, or generate fumes
vacuum cleaning or special exhaust hoods will be required for the above actions

3.5 APPROVED MATERIALS

3.5.1 Chemicals-MSDS* on hand
acetic acid-fume hood only
acetone
ammonium hydroxide- fume hood only
AZ1512 (photoresist)-fume hood only
AZ1500 thinner-fume hood only
AZ400K developer
AZ protective coating—fume hood only
AZ300T photoresist stripper
ethyl alcohol
ethylene glycol—fume hood only
ferric chloride—general wet bench only
Gold Etchant TFA—general wet bench only
hexamethyldisilane—fume hood only
hydrochloric acid—fume hood only
hydrofluoric acid—fume hood only
hydrogen peroxide
Hydrolube CG-732
iodine—fume hood only
isopropyl alcohol
methyl alcohol
methylene chloride-frame hood only
Micro cleaner
Microposit (R) S1400 series photoresist
Microposit (R) 351 Developer
MS-111 Stripping Agent—general wet bench only
nitric acid-fume hood only
petroleum ether—fume hood only

* Safety Material Data Sheet

phosphoric acid—fume hood only
potassium hydroxide—fume hood only
potassium iodate
potassium iodide
silver epoxy past type I/II—fume hood only
sodium hydroxide-fume hood only
ST-22, positive photoresist stripper—fume hood only
sulfuric acid-fume hood only
1,1,1-trichloroethane
trichloroethylene—fume hood only
trichlorotrifluoroethane (FREON TF)
Tra-Strip K902—general wet bench only
turpentine
Wire stripper #416—general wet bench only
Wire stripper PT-5-ML—general wet bench only

3.5.2 Paper Items
tissue, LABEX lintfree only
lab notebooks, for immediate use only
procedures

3.5.3 Metals
aluminum
beryllium
brass
chromium and chromium plated
copper
magnesium
nickel and its alloys
niobium
precious metals
silicon
stainless steels
tantalum
titanium
tungsten

3.5.4 General Materials
plastics, non-filled
ceramics, fired
glass
quartz
latex rubber, non-powdered
epoxy
wood, epoxy or urethane finished
ballpoint pens
Kapton
foams, closed cell
tapes, 3M PVC Electrical Tape
Scotch magic transparent tape

4.0 APPROVALS AND CHANGES

4.1 Approvals of exemptions for Restricted Materials and Actions will be granted by the clean room manager based upon his judgment and the facts presented by the intended user. Verbal discussion and approval prior to use is the minimal requirement. Previous approval does not guarantee repeat approval. The clean room manager will document all approved exemptions.

- 4.2 Additions to the Approved Materials and Actions list will be approved by the Clean Room Committee. Requests for additions and supporting evidence should be submitted to the Clean Room Committee Chairman in writing. He may issue temporary approval until the next Clean Room Committee meeting.
- 4.3 Changes to this Procedure are by review and approval of the Clean Room Committee and the Hardware Manager. Requests for changes to be considered should be submitted to the Chairman of the Clean Room Committee.