

DEPARTMENT OF MECHANICAL ENGINEERING

Name of SOP	F18 Drag on Spheres
Effective Date	March 30, 2004 Rev. January 21, 2008
Author	M.F. Lightstone
Reason for SOP	Risk of injury
Approved by (supervisor)	Ron Lodewyks
Date approved by (JHSC)	February 13, 2008

Definitions

Terms	
acronyms	RMM – Risk Management Manual JHSC - Joint Health and Safety Committee Chair - Chair of Mechanical Engineering EOHSS - Environmental Occupational Health & Safety Service

Requirements

Applicable OSHA regulations and / or codes of practice.
<ol style="list-style-type: none"> 1. OSHA code. 2. McMaster University Risk Management Policies
Training and competency.
<ol style="list-style-type: none"> 1. Training provided by technical staff in the Mechanical Engineering Department. 2. Competency is shown by the individual after training

Description of the Task

Location and time of work	JHE106 During normal working hours
Individuals and skills required	Graduate Students, none
Equipment and supplies required	Spheres, tubes, working fluids, Water, Ethylene Glycol, Glycerin
Personal protective equipment required	none
Sequential steps to complete the work safely.	
<p>General safety instructions:</p> <ol style="list-style-type: none"> 1. Do not overreach when dropping the spheres into the tubes. 2. Keep proper footing and balance at all times 3. Do not lean on the tubes containing the working fluids 4. Do not stand on the support platform for the tubes 5. Do not ingest ethylene glycol – it is harmful (see Material Safety Data Sheet) 6. Follow the lab write up procedures dropping spheres of various size and material into the different columns and fluid medium, time the rate of descent past the predetermined markers on the tube. 7. Wash your hands after completing the experiment 8. Keep work area clean. Cluttered areas and benches invite injuries. 	

Contingency Plan and Reporting

Accident / injury response
<ol style="list-style-type: none"> 1. Apply first aid as required 2. Notify Mechanical Engineering technical staff immediately 3. For all injuries complete a “Injury/Incident Report” and provide a copy to the Chair and EOHSS 4. In case of critical injury call security (dial 88). 5. In case of critical injury notify EOHSS immediately, ext 24352
Spill response
The three vertical tubes contain water, glycol, and glycerin. Spillage of these fluids could result in slippery

conditions. In the event of a spill, notify the graduate student in charge of the experiment or technical staff in JHE 205, ext. 24628.

Equipment shutdowns.

Equipment does not require shutdown.

Environmental Responsibility

Waste disposal procedures

Procedure does not generate waste.

Building air quality

Procedure does not effect air quality

References (OHSA/ regulations, EPA and Municipal environmental regulations, McMaster University Program/ Policy, Material Data Sheets (MSDS).

1. RMM #301 Standard Operating Procedure
2. RMM #300 Safety Orientation and Training Program
3. RMM #309 Laboratory safety manual

RMM #1000 Reporting and Investigating Injury, Incidents and Occupational Disease

Distribution

1. Trained teaching assistant who is the lab operator
2. Technical Staff of Mechanical Engineering
3. Mechanical Engineering Chair
4. Faculty of Engineering JHSC