LOCAL JOINT HEALTH AND SAFETY COMMITTEE
DEPARTMENT OF BIOMEDICAL SCIENCES
STANDARD OPERATING PROCEDURE

1. SAFE HANDLING OF CORROSIVES (ACIDS AND BASES)

Effective Date: April 2002
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Purpose: To promote the safe handling and use of corrosive chemicals in the lab.
Approvals Required: Faculty Supervisor, Local JHSC, EHS

2. DEFINITIONS:

Acid: A compound which, in aqueous solution, undergoes dissociation with the formation of hydrogen ions.
Strong Acid: An acid that is extremely corrosive with an affinity to digest all body tissues eg. sulphuric, nitric, hydrochloric, perchloric.
Base: The non acid part of a salt: a substance which combines with acids to form salts.

3. REQUIREMENTS:

All persons must have WHMIS training and completed a departmental safety orientation. Persons handling strong corrosives **must wear P**ersonal **P**rotective **E**quipment including a buttoned-up labcoat, full face protection, non-opened toed shoes which fully cover the feet and chemical resistant (neoprene or 4H) gloves which are stored at the Spill Response Station.

4. TASK:

***Storage and Transport of Corrosives*:**

a) Purchase all corrosive chemicals in SAFETY-COTE® bottles, and only in quantities necessary for the project.
b) Acids and bases must be stored separately in corrosion resistant cupboards (usually a designated area below the sink or fumehood). Corrosives should be stored below counter level to reduce risk of accidental spills.
c) **DO NOT** store organic and oxidizing acids together (e.g. acetic acid and nitric acid – **review WHMIS Chart and MSDSs**).
d) When transporting corrosives in public areas, such as hallways, use a safety tote or carrier or other enclosed corrosive-proof container.

***Handling and Diluting Corrosives*:**

a) While wearing the required **P**ersonal **P**rotective **E**quipment listed above in Requirements Section, carefully transport corrosive to the fume hood. Open bottles only in the hood with the hood sash partially closed in order to avoid inhalation of corrosive fumes which may cause tissue damage.
b) **ALWAYS** add corrosive **slowly** to diluent, **NEVER** diluent to corrosive. This reduces the risk of splashing and avoids producing a strong exothermic (heat producing) reaction.
c) At the completion of the task, thoroughly rinse the gloves in cold running tap water to remove any traces of the corrosive.

5. CONTINGENCY PLAN AND REPORTING:

a) If a corrosive accidentally comes in contact with exposed skin or eyes, flush with copious quantities of water for a minimum of 15 minutes at the **EYEWASH STATION**. If the

spill is on clothing, remove immediately and flush the skin beneath the spill with water for a minimum of 15 minutes. If necessary seek medical attention and file an Injury/ Incident Report within 24 hours (form available from your Departmental Administrative Assistant or Local JHSC)

b) **Small, simple spills** (<100 mL) on surfaces can be absorbed and neutralized using the Acid or Base Handler (as appropriate) located at your Spill Response Station). Initially Dyke (i.e. surround) the spill with the Handler to contain it, then apply to the rest of the spill until it is covered in a ratio of 2 parts Handler to 1 part spill. Mix the Handler into the spill with a non-reactive device (e.g. glass pipette) until the mixture is thoroughly dry.

c) **Larger spills of up to several litres**, or when vapours are a hazard, or if a spill is released into the environment (i.e. down a floor drain), should be handled by evacuating the area and calling the emergency number **x52000** to report the incident.

d) If in doubt, seek help within your department or phone the emergency number for direction.

6. WASTE MANAGEMENT:

a) Small quantities of liquid corrosives can be diluted and neutralized. Check pH with pH meter or Litmus Paper, neutralise to pH7 and flush down the sink with col water.

b) Larger quantities must be tagged, a **Request for Hazardous Waste Pickup** form filled out, and disposed of through the University of Guelph Hazardous Waste stream.

7. REFERENCES:

Environmental Health and Safety Bulletin Vol. VII No.3 1998
Environmental Health and Safety Bulletin Vol. IX No. 5 2000
University of Guelph Safety Policy Manual: Policy 851.08.14
Laboratory Safety CSMLS Guidelines Fifth Ed. 2001

8. DISTRIBUTION OF COPIES:

Technicians, Graduate students, Project Students, other University of Guelph employees working in the lab.
Dr. _____ , Faculty Supervisor
Environmental Health and Safety
Local JHSC, Department of Biomedical Sciences

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Date: