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		Revision no:	0
	Safety Information Sheet TRANSPORTING CHEMICALS	Rev. Date	3-2-2010
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1. INTRODUCTION

The PI Department of Health, Safety and Environmental have established the following procedure / guidelines as the minimum acceptable practice for transporting toxic, flammable, reactive, or corrosive chemicals on campus.

If desired, individual departments may establish more stringent requirements for transportation of these materials within campus buildings.

This procedure does not apply to transporting radioactive materials.

2. SCOPE

These procedures outline the PI's determination of reducing the risk of incidents related to potentially hazardous activities.

These procedures are applicable to all Faculties, staffs and students and contractors working at all Petroleum Institute locations, including facilities, activities and service.

3. PROCEDURE FOR TRANSPORTING CHEMICALS (INCLUDING GAS CYLINDERS)

There is always a risk of spillage during the transport of hazardous goods. When incompatible substances mix with each other there is a possibility of a chemical reaction, which can produce enough heat to cause fire or explosion and can release dangerous gases.


Spillages are possible in the following situations:

- goods are not properly packaged
- handling (loading, unloading, etc.) is done without reference to the contents, (perhaps because of missing or incomplete labeling)
- fire; either when the load or the vehicle is burning
- collision or overturn
- defected tightness or incomplete closing of valves and connections

3.1 A risk of an accident:

A risk of an accident is present when

- vehicles carrying dangerous goods are left to stand unattended
- the vehicle or container runs loose because it is not properly connected or secured
- the load starts to move during transport
- spillage are not quickly washed away from the vehicles or containers
- spillage are not properly cleaned

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3.2 Safety measures:

Safety measures, which shall be implemented during the chemical transportation, are:

- To ensure lids are tightly fitted
- To place liquids on a tray or in plastic bucket(secondary container) to avoid any spills
- To pack powders and solids securely
- To pack glassware properly in boxes with sign and direction of handling
- To keep corroding chemicals, such as peroxide, away from all other materials
- To travel with vehicle window down if carrying flammable or odorous materials
- To double-wrap old liquid container in plastic bags to prevent leaking

4. General rules and regulations:

- All chemicals must be transported within secondary containers capable of holding all materials in the event of a spill. Acceptable secondary containers include plastic bottle carriers with closed tops and handles or non-metal liquid-tight carts with lips on all four sides. Never transport incompatible chemicals in the same secondary containment. Use plastic tubs or separate bottle carriers to prevent incompatibles from mixing.
- Use freight elevators for moving chemicals between floors. If freight elevators are not available, use unoccupied passenger elevators. Stairs should be used only if elevators are not available.
- Wear appropriate Personal Protective Equipment (PPE). Minimum PPE includes safety glasses, lab coat or other appropriate lab clothing, and closed toe shoes. Hazardous chemicals must be attended at all times while being transported.
- Individuals transporting chemicals must ensure containers are properly labeled and know what to do in the event of a release or spill. Material Safety Data Sheets (MSDSs) are a good source for this information.
- Bottles of extremely toxic or carcinogenic chemicals have to be placed in an unbreakable outer container before transport
- Compressed gas cylinders have to be transported in special compressed gas cylinder handcarts. When transporting cylinders across asphalt, uneven terrain or between buildings, two people must be in attendance to prevent tipping and unanticipated jolting of the gas cart. Cylinders must be securely attached to the cart and valve protection caps must be in place.

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- Materials that are unstable, explosive, or unusually hazardous due to amount or toxicity should not be moved without first contacting HSE (e.g. outdated peroxide formers such as THF, dry Picric Acid, and containers of acutely hazardous materials).
- Avoid transporting chemicals in a passenger vehicle, but if it is a must, do not place chemicals in the passenger compartment. Place the containers in the trunk or cargo bed and ensure that they are properly packaged and firmly secured. Never leave chemicals unattended or stored in a vehicle.
- Transport cryogen's only in approved storage vessels (e.g. Dewar flasks with pressure relief mechanisms). Use appropriate PPE including eye protection in the form of a face shield or goggles, appropriate gloves, apron, and closed-toe-shoes. Never transport in the passenger compartment of a vehicle due to the hazard from asphyxiation.

Transporting Chemicals in Personal Vehicles

Transporting chemicals in personal vehicles either on campus or to off-site research locations for University business is not a recommended practice.

Insurance companies may don't cover claims involving the transportation of hazardous materials and it is not safe for PI campus, people and personal that could be involved in case of accident.

When transporting materials in PI vehicles, the following precautions should be followed:

- Secondary containment should be used to contain any spill of the hazardous materials being transported.
- Incompatible chemicals should be separated into different secondary containers.
- Hazardous materials should be transported in the trunk, or as far away from passengers as possible.
- All containers should be clearly labeled with content information.

Materials needed to contain or clean-up a spill, such as sorbent pads, gloves, and eye protection, should be available in the vehicle and has to be escorted trained personal.