Section15:Environmental, Health and Safety

ScinoPharm's Environmental, Health and Safety programs and practices are being established in accordance with the six codes of Management Practices of Responsible CARE™ developed by the U. S. Chemical Manufacturers Association (CMA). These six codes include Community Awareness and Emergency Response, Process Safety Management, Employee Safety & Health, Transportation Safety, Pollution Prevention, and Product Stewardship. A more detailed list of the programs is presented in Table 1 on the following page.

To protect employee safety and health, a system of containment and special material handling devices has been established in the workplace. Equipment used for this purpose include protected drum tipping stations, air controlled packaging stations, laminar flow hoods, and gloveboxes for the sampling and milling areas. The containment level will be controlled down to a minimum level of 10 g/m^3.

For process safety, a company-wide MSDS and toxicity information database has been established to meet U.S. OSHA requirements. This database is included on a CD-ROM, which is provided by the Canadian Center for Occupational Health and Safety (CCOHS). This database provides detailed safety information on over 96,000 completed MSDS's and toxicity profiles of over 130,000 chemicals. In addition, an on-site program will be in place to predict and properly manage chemical reactive hazards and scale-up safety assessments using Differential Scanning Calorimetry (DSC) -see attached Table-2.

Employee's safety and health records will be kept in compliance with U.S. OSHA guidelines, and these will allow direct comparisons to statistics maintained at all U.S. chemical and pharmaceutical plants. These include the main indexes: 1) the OSHA-Recordable Injury index, 2) the OSHA Lost Time Accident Frequency Index, and 3) the OSHA Lost Time Accident Severity Index.

15-1:Table-1 Elements of the EH&S Program

*** Community Awareness and Emergency Response**

1. Community Awareness and Communication Procedure.
2. Emergency Response Procedure.
3. Incident Reporting and Investigation Procedure.

*** Process Safety Management**

1. MSDS Collection and Management Procedure.
2. Process Hazard Analysis Procedure.
3. Permit for Cutting/Welding procedure.
4. Permit for Confined Space Entry Procedure.
5. Zero State Lockout/Tagout Procedure.
6. Contractor Management Procedure.
7. Management of Change Procedure.
8. Safety and Health Training Procedure.
9. Safety Inspection Procedure.

*** Employee Safety and Health**

1. Workplace Exposure Assessment procedure.
2. Hazard Communication Procedure.
3. Employee Healthcare Management procedure.
4. Fire Protection Management Procedure.
5. Personal Protective Equipment Management Procedure.

*** Pollution Prevention**

1. Air Pollution Control Procedure.
2. Wastewater Pollution Control Procedure.
3. Solid Waste Management Procedure.
4. Toxic Substance Management Procedure.
5. Noise Control Procedure.
6. Waste Minimization Management Procedure.

*** Distribution**

1. Chemical Storage safety and Handling Safety Guide.
2. Chemical Transportation safety Guide.

*** Product Stewardship**

1. Product Risk Management Procedure.

15-2:Table-2 SPT Reactive Hazard &Scale-Up Safety Assessment Program

SPT Reactive Hazard & Scale-Up Safety Assessment Program

Stage	Tools	Procedures
1. Hazard Reactivity Testing of Chemicals	Differential Scanning Calorimeter	
2. Thermal Hazard & Runaway Reaction Testing	Vent Sizing Package II	
3. Scale-Up Safety Assessment & Design	API RP 521 Guideline, DIERS W Method, Reaction Calorimeter	

DSC : Differential Scanning Calorimeter
VSP II : Vent Sizing Package II
RC1 : Reaction Calorimeter 1
ΔH_r : Heat of Reaction
T_0 : Onset Temperature
ΔT_{AB} : Adiabatic Temperature Rise
ΔP_{AB} : Adiabatic Pressure rise
API : American Petroleum Industry
DIERS : Design Institute for Emergency Relief