ABI MODEL 390Z CHEMISTRY WITH HLP WASTE PROFILE

EMERGENCY PHONE NUMBERS:
(USA) 415-570-6667 Ext. 999 (UK) 0925-825650

I. IDENTIFICATION

This Waste Profile assumes a synthesis using a derivatized high-loaded polystyrene (HLP) support. All liquid waste from the Model 390Z is collected in a 20-L bottles located below the instrument. The Model 390Z generates about 520 mL of hazardous waste per cycle at the 200-µmol scale. This waste is a complex mixture of reagents which may have properties of greater hazard than the individual waste components by themselves. **HANDLE THIS MATERIAL WITH EXTREME CAUTION! DO NOT DISPOSE OF THIS WASTE IN SINKS OR DRAINS! THIS MATERIAL SHOULD BE DISPOSED OF AS A REGULATED HAZARDOUS WASTE!**

II APPROXIMATE COMPOSITION

Material	%	TLV	PEL*	CAS#
1-methylimidazole	<1	N/A	N/A	616-47-7
Acetonitrile	70	40 ppm	40 ppm	75-05-8
Dichloromethane	14.5	100 ppm	500 ppm	75-09-2
Tetrahydrofuran	2.7	200 ppm	200 ppm	109-99-9
Phosphoramidites	<1	N/A	N/A	N/A
Acetic anhydride	<1	N/A	N/A	N/A
Iodine	<1	0.1 ppm	0.1 ppm	7553-56-2
2,6-lutidine	<1	N/A	N/A	108-48-5
Dichloroacetic acid	2.6	N/A	N/A	79-43-6
Pyridine	<1	5 ppm	5 ppm	110-86-1
Tetraethylthiuram disulfide	<1	2 mg/m^3	2 mg/m^3	97-77-8
N,N-Dimethylformamide	9.6	10 ppm	10 ppm	68-12-2

N/A = Not Available

* OSHA's PEL limits are subject to the decision of the 11th Circuit Court of Appeals or higher Federal Court decision.

III. PHYSICAL DATA

BOILING POINT, 760 mm: N/A

FREEZING POINT: N/A

SPECIFIC GRAVITY (H_2O = 1): 0.94

pH RANGE: 4-6

VOLATILITY (vol %): 96-98%

SOLUBILITY IN H_2O: Soluble

APPEARANCE AND ODOR: Yellow to reddish-brown liquid with an acrid, unpleasant odor

IV. FIRE AND EXPLOSION HAZARD DATA (Acetonitrile data only!)

FLASH POINT (Closed Cup): 5.6 °C (42 °F)

FLAMMABLE LIMITS: 4.4% LEL 16% UEL

FIRE EXTINGUISHING MEDIA: Dry chemical, alcohol foam, carbon dioxide or Halon

SPECIAL FIRE FIGHTING PROCEDURES: Use self-contained breathing apparatus and protective clothing to prevent skin and eye contact.

V. HEALTH HAZARD DATA

EXPOSURE LIMITS: See Section III. For acetonitrile, the STEL is 60 ppm and the IDLH level is 4,000. For Dichloromethane, the STEL is 1000 ppm and the IDLH level is 5,000 ppm.

EFFECTS OF ACUTE OVEREXPOSURE

SWALLOWING: Harmful if swallowed! Causes severe irritation of eyes, nose, and throat, Higher concentrations may cause liver and kidney damage, unconsciousness, and death.

SKIN: May cause severe irritation or burns. Allergic skin sensitization may also occur.

INHALATION: May cause irritation of eyes, nose, throat, and lungs. Higher concentrations may cause pulmonary edema, unconsciousness, and death.

EMERGENCY AND FIRST-AID PROCEDURES

SWALLOWING: If conscious, give large quantities of water immediately and induce vomiting. Get medical attention immediately. Do not induce vomiting if unconscious.

SKIN: Remove contaminated clothing. Flush the contaminated area with water and wash with mild soap or detergent. Get medical attention.

INHALATION: Provide fresh air and rest. If breathing is difficult, provide oxygen and get medical attention immediately.

EYES: Flush eyes immediately with large amounts of water for at least 15 minutes. Get medical attention.

VI. REACTIVITY DATA

STABILITY: Stable

INCOMPATIBILITY: Contact with strong oxidizing agents or concentrated acids or bases may cause fire or explosion.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS: Burning may release toxic vapors and gases including phosgene, hydrogen chloride, hydrogen fluoride, carbon monoxide, and oxides of nitrogen.

HAZARDOUS POLYMERIZATION: Will not occur.

VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN: Avoid inhalation and skin contact. Wear protective clothing. Ventilate area of spill or leak. Remove all ignition sources. Small quantities may be collected with absorbant towels or pads and removed to a well-ventilated area away from ignition sources. Larger amounts (1 liter or more) may be collected with an inert absorbant (kitty litter or similar material) or commercially available spill pillows designed for solvent collection. This waste material must not be allowed to enter confined spaces (such as a sewer!!!) because of the possibility of an explosion.

WASTE DISPOSAL: This instrument waste solution should be disposed of as a regulated hazardous waste by a properly-permitted hazardous waste management facility in accordance with federal, state and local regulations. Recommend disposal methods include high temperature incineration and solidification for secure chemical landfill disposal.

VIII. SPECIAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION: An MSHA- or NIOSH-approved respirator for organic vapors is recommended. A supplied-air or SCBA respirator is recommended for high vapor concentration and emergency situations.

VENTILATION: Handle within a well-ventilated area. Minimize open exposure to air.

PROTECTIVE GLOVES: Neoprene or latex rubber gloves are recommended.

EYE PROTECTION: Safety glasses with side shields, monogoggles, or face shield.

OTHER PROTECTIVE EQUIPMENT: As necessary to prevent skin contact.

IX. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN: Handle as a flammable, poisonous liquid. Maintain adequate ventilation at all times. Do not breathe vapor. Do not get in eyes, on skin, or on clothing. Accidental contact should be washed immediately. Keep away from heat, sparks, and flame. Spill collection materials, eye wash, and safety shower should be in area of use.

OTHER: This waste solution has strong solvent properties and will attack many forms of rubber, plastics, coating, and finishes.

X. ADDITIONAL INFORMATION

When not directly attached to the instrument, this waste material should be stored in a secure, well-ventilated location suitable for flammable materials. Store away from light, heat, or potential ignition sources. Contact the appropriate state hazardous waste regulatory agency for proper disposal procedures and lists of registered service companies.

THIS WASTE MATERIAL IS HAZARDOUS AND SHOULD ONLY BE HANDLED BY PERSONS THOROUGHLY TRAINED IN HAZARDOUS MATERIALS HANDLING PROCEDURES!