RADIONUCLIDE SAFETY DATA SHEET

NUCLIDE: Cl36 **FORMS: ALL SOLUBLE**

PHYSICAL CHARACTERISTICS:

HALF-LIFE: 3.08×10^5 years TYPE DECAY: $beta^-$
maximum energy 0.714 MeV

Hazard category: C- level (low hazard) : 0.01 to mCi
B - level (Moderate hazard) : > 1 to 100 mCi
A - level (High hazard) : > 100 mCi

EXTERNAL RADIATION HAZARDS AND SHIELDING:

The exposure rate at 1 cm from a 1 millicurie point source of C136, assuming no attenuation in air or self absorption, is 310,000 mrad/hr.

The dose rate to the basal cells of the skin from the deposition of one microcurie per cm^2 is 4000 mrads pre hour.

Maximum ranges of these betas are 80 inches in air, about 0.08 inches in plastic and 0.04 inches in glass.

HAZARDS IF INTERNALLY DEPOSITED:

The Annual Limit of Intake which would deliver and effective dose equivalent of 500 mrems to the whole body is 162 uCi. (Based on ICRP)

DOSIMETRY AND BIOASSAY REQUIREMENTS:

Film badges and dosimeter rings are required if 5 millicuries are handled at any one time or millicurie levels are handled on a frequent (daily) basis.

Urine assays may be required after spills or contamination incidents.

SPECIAL PROBLEMS AND PRECAUTIONS:

1. Routinely survey work area using a survey instrument and smears.
2. Change gloves often so to avoid skin contamination.
3. Segregate wastes to those with half-lives greater than 90 days (but not with H3 and/ or C14).
3. Limit of soluble waste to sewer 10 microcuries/ day per lab.