# Radionuclide Safety Data Sheet

**Nuclide: Cl36**

**Forms:** All Soluble

## Physical Characteristics:

- **Half-Life:** $3.08 \times 10^5$ 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 mrad/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 an effective dose equivalent of 500 mrem 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).
4. Limit of soluble waste to sewer 10 microcuries/day per lab.

10/87