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## **Chlorine (Cl-36)**

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**Half Life:** 300,000 years plus

**Radiation:** Beta

**Shielding:** 2mm plastic - may cause Bremsstrahlung

**Dosimetry:** Body and ring badges when handling. Urine assays may be required after suspected exposure or contamination

**Detection/Measurement:** GM with pancake probe. Wipe tests

### **General Precautions:**

Maintain your occupational exposure to radiation As Low As Reasonably Achievable [ALARA]

All persons handling radioactive material must be properly trained by EHS prior to handling and are listed as a rad worker by EHS department

Plan experiments accordingly to minimize external exposure by reducing exposure time, using shielding and increasing your distance from the radiation source

Monitor yourself and the work area during and after each use of radioactive material

Use the smallest amount of radioisotope possible to minimize radiation dose and radioactive waste

Keep an accurate inventory of all radioactive material including records of all receipts, transfers and disposal – contact EHS for any disposal needs including liquid waste

Perform and record lab surveys as needed (monthly and post experiment)

Avoid generating mixed waste (combinations of radioactive, biological and chemical waste)

### **Special Precautions:**

**Store CI-36 behind adequate plastic shielding**

**Use tools to indirectly handle unshielded sources and potentially contaminated containers - no direct hand contact**

**Ensure that an appropriate, operational survey meter is present in the work area and turned on whenever CI-36 is handled to immediately detect contamination**

**Shield waste containers as needed to maintain accessible dose rate ALARA**

### **Safe Lab Practices:**

**Disposable gloves, lab coats, and safety glasses are the minimum PPE required when handling radioactive material**

**Remove and discard potentially contaminated PPE prior to leaving the lab area where radioactive material is used**

**Cover all lab bench tops where radioactive material is handled with plastic-backed absorbent paper – change as needed**

**Handle radioactive solutions in trays large enough to contain the material in the event of a spill**

**Never eat, drink, smoke, handle contact lenses, apply cosmetics, or take medicine in the lab - keep food, drinks, and cosmetics out of the lab entirely**

**Never pipette by mouth**

**Never store food and beverages in refrigerators/freezers used for storing radioisotopes – ensure that isotopes are secured at all times**

**Avoid any skin contact with skin-absorbable solvents containing radioactive materials**

**Fume hoods and biological safety cabinets for use with non-airborne radioactive material must work properly and be inspected annually by the EHS department**

**Do not take any radioactive material off site or use in any ways not approved by the Radiation Safety Officer**