



**SAFETY DATA SHEET
CHROMIUM-51**

⁵¹Cr

PHYSICAL DATA:

Radiation: Gamma () 320 keV (9.8 % abundance)
X-ray - 5 keV (22 % abundance)
Specific (ray constant 0.17 : Sv/37 MBq @ 1 m
Half Life (T_{1/2}) Physical - 27.8 d
Biological - 616 d
Effective - 26.6 d
Specific Activity 3.42E + 15 Bq.g⁻¹

RADIOLOGICAL DATA:

Exemption Quantity 1 x 10⁶ Bq
Radiotoxicity Moderate
Critical organ Lower large intestine (LLI)
Exposure routes Ingestion, inhalation, absorption
Radiological hazard External - 16 mSv/hr/37 MBq @ 1 cm
Internal - concern

SHIELDING:

	<u>Half Value Layer (HVL)</u>	<u>Tenth Value Layer (TVL)</u>
Lead	2mm	7 mm
Concrete	2.8 cm	9.3 cm
Steel	21 cm	50 cm

* *The accessible dose rate should not exceed 2.5 : Sv/hr*

DOSIMETRY REQUIREMENTS

Whole body TLD's

DETECTION

Survey meter equipped with a NaI detector

PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

Lab coats, double gloving

SPECIAL PRECAUTIONS

Avoid skin contamination by double gloving (change outer pair ~ every 30 minutes), use remote handling devices where possible

Store ⁵¹Cr waste behind lead shielding sufficient to reduce dose rate to < 2.5 : Sv/h

^{51}Cr Handling Procedures:

1. Designate an area for handling ^{51}Cr and label clearly
2. Do not consume food and/or drink in the laboratory
3. Do not pipette by mouth
4. Cover work surfaces with absorbent liners
5. Use transfer pipettes and spill trays to confine contamination
6. Promptly return stock solutions to storage areas
7. Maintain contamination control by regularly monitoring and promptly cleaning contaminated areas
8. Isolate waste in clearly labelled containers and arrange for disposal with the RSO
9. Maintain cleanliness and good housekeeping in the work area
10. Supervise nuclear substances at all times when in use
11. Keep laboratory locked when unattended