

# Radionuclides

Caution: For Laboratory Use. A product for research purposes only



Product Number: NEZ030S

## LOT SPECIFIC INFORMATION

Calibration Date	07-Sep-2016
Lot Number	CR090716
Specific Activity	248.77 mCi/mg
	9.20 GBq/mg
Concentration	1 mCi/mL
	37 MBq/mL
Radiochemical Purity	99.7 %
Radionuclidic Purity	99.9 %

Values given are all as of Calibration Date.

**PACKAGING:** Solvent is Saline.

**SPECIFIC ACTIVITY RANGE:** Calculated as Cr.

**STORAGE CONDITIONS:** Store this product at room temperature.

**CONTAMINANTS:** none detected

## PHYSICAL PROPERTIES:

Decay Mode	Electron Capture
Half Life	27.7 Days
Principal Gamma Photon	0.320 MeV (9.8%)

**Occupational Limits** (based on most restrictive intake category: 10 CFR 20 U.S.NRC Regulations)

Derived Air Concentration (DAC)	$8 \times 10^{-6}$ $\mu\text{Ci/mL}$
Annual Limit on Intake (ALI)	$2 \times 10^4$ $\mu\text{Ci}$

## DECAY CHART:

To use the decay table find the number of days in the top row and left hand column of the chart then find the corresponding decay factor. To obtain a precalibration number, divide by the decay factor. For a postcalibration number multiply by the decay factor.

Days	0	1	2	3	4	5	6	7	8	9
0	1.000	.9753	.9512	.9277	.9048	.8824	.8606	.8394	.8186	.7984
10	.7787	.7595	.7407	.7224	.7045	.6871	.6702	.6536	.6375	.6217
20	.6064	.5914	.5768	.5625	.5486	.5351	.5219	.5090	.4964	.4841
30	.4722	.4605	.4491	.4380	.4272	.4167	.4064	.3963	.3865	.3770

## HAZARD INFORMATION:

**WARNING:** this product contains a chemical known to the state of California to cause cancer.

1. Designate area for handling  $^{51}\text{Cr}$ , clearly label all containers.
2. Store  $^{51}\text{Cr}$  behind lead shielding.
3. Wear extremity and whole body dosimeters while handling mCi (37 MBq) quantities.
4. Use shielding to minimize exposure while handling  $^{51}\text{Cr}$ .
5. Use tools to indirectly handle unshielded sources and potentially contaminated vessels.
6. Prohibit eating, drinking, smoking and mouth pipetting in room where  $^{51}\text{Cr}$  is handled.
7. Use transfer pipettes, spill trays and absorbent coverings to confine contamination.
8. Handle  $^{51}\text{Cr}$  compounds that are potentially volatile or in powder form in ventilated enclosures.
9. Sample exhausted effluent and room air by continuously drawing a known volume through membrane filters.
10. Wear lab coat, wrist guards and disposable gloves for secondary protection.
11. Maintain contamination and exposure control by regularly monitoring and promptly decontaminating gloves and surfaces.
12. Use end-window Geiger-Mueller detectors, NaI(Tl) detector or liquid scintillation counter to detect  $^{51}\text{Cr}$ .
13. Submit urine samples for bioassay at least four hours after handling  $^{51}\text{Cr}$  to indicate uptake by personnel.  $^{51}\text{Cr}$  is slowly eliminated from the body. Whole body counting provides a more sensitive method than urinalysis for determining  $^{51}\text{Cr}$  body burdens. Whole body counting may be used occasionally to verify the urinalysis results.
14. Isolate waste in clearly labeled, shielded containers and hold for decay.
15. Establish surface contamination, air concentration and urinalysis action levels below regulatory limits. Investigate and correct any causes that threaten these levels to be exceeded.
16. On completing an operation, secure all  $^{51}\text{Cr}$ , remove and dispose protective clothing and coverings, monitor and decontaminate self and surfaces, wash hands and monitor them again.

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