

# Co-57 Fact Sheet

## Cobalt-57 Radiochemical Cobalt Chloride Solution

Cobalt (Co-57) Chloride

Half-Life: 271.8 days

### Cobalt-57 Radiochemical Cobalt Chloride Solution

Cobalt-57 is used to manufacture standards and sources for dose calibrators, gamma cameras and gauges. It is also used as a marker to help estimate organ size and location, as well as in in vitro diagnostic kits for the study of anemia related to vitamin B12 deficiency and malabsorption.

MDS Nordion has an unparalleled base of technical expertise and production capabilities. State-of-the-art facilities provide a reliable supply of isotopes to customers around the world. Our strong focus on customer service and quality has made us a world leader.

### Process Data

#### Nuclear Reaction

$^{58}\text{Ni} (p,2n) ^{57}\text{Co}$

#### Assay

High resolution gamma spectrometry at 122.1 keV

### Product Specification

#### Chemical Form

Cobalt chloride in dilute HCl

#### Normality

0.1 N  $\pm$  0.05 N HCl

#### Specific Activity\*

$\geq 5000$  Ci/g

#### Activity Concentration\*

$\geq 10$  mCi/mL

#### Radiopurity\*

$^{57}\text{Co} \geq 99.6\%$

$^{56}\text{Co} \leq 0.3\%$

$^{58}\text{Co} \leq 0.1\%$

$^{60}\text{Co} \leq 0.002\%$

#### Chemical Purity\*

Cu, Fe, Ni  $\leq 0.2$   $\mu\text{g}/\text{mCi}$   $^{57}\text{Co}$

\*Activity and radiopurity specifications are at customer's calibration time.

### Packaging

- Reacti-vial – screw cap V-vial with septum (1 mL)
- Kontes vial – crimp cap glass V-vial (3 mL)
- Hypovial – crimp cap glass vial with septum (6 mL, 10 mL)  
*(Other vial options are available).*

### World Class Delivery Service

MDS Nordion has a world class distribution system that includes a unique, software-based order management system. Carefully managed transportation logistics ensure products reach their destination on time.

## Cobalt-57 Decay Table Half-Life: 271.8 days

DAYS:	0	5	10	15	20	25	30	35	40	45
0	1.0000	0.9873	0.9748	0.9625	0.9503	0.9382	0.9263	0.9146	0.9030	0.8916
50	0.8803	0.8691	0.8581	0.8472	0.8365	0.8259	0.8154	0.8051	0.7949	0.7848
100	0.7749	0.7651	0.7554	0.7458	0.7364	0.7270	0.7178	0.7087	0.6998	0.6909
150	0.6821	0.6735	0.6650	0.6565	0.6482	0.6400	0.6319	0.6239	0.6160	0.6082
200	0.6005	0.5929	0.5854	0.5779	0.5706	0.5634	0.5562	0.5492	0.5422	0.5354
250	0.5286	0.5219	0.5153	0.5087	0.5023	0.4959	0.4897	0.4834	0.4773	0.4713
300	0.4653	0.4594	0.4536	0.4478	0.4422	0.4366	0.4310	0.4256	0.4202	0.4149
350	0.4096	0.4044	0.3993	0.3942	0.3892	0.3843	0.3794	0.3746	0.3699	0.3652
400	0.3606	0.3560	0.3515	0.3470	0.3426	0.3383	0.3340	0.3298	0.3256	0.3215
450	0.3174	0.3134	0.3094	0.3055	0.3016	0.2978	0.2940	0.2903	0.2866	0.2830
500	0.2794	0.2759	0.2724	0.2689	0.2655	0.2621	0.2588	0.2555	0.2523	0.2491
550	0.2460	0.2428	0.2398	0.2367	0.2337	0.2308	0.2278	0.2250	0.2221	0.2193
600	0.2165	0.2138	0.2111	0.2084	0.2057	0.2031	0.2006	0.1980	0.1955	0.1930
650	0.1906	0.1882	0.1858	0.1834	0.1811	0.1788	0.1766	0.1743	0.1721	0.1699
700	0.1678	0.1656	0.1635	0.1615	0.1594	0.1574	0.1554	0.1534	0.1515	0.1496
750	0.1477	0.1458	0.1440	0.1421	0.1403	0.1386	0.1368	0.1351	0.1334	0.1317
800	0.1300	0.1284	0.1267	0.1251	0.1235	0.1220	0.1204	0.1189	0.1174	0.1159
850	0.1144	0.1130	0.1116	0.1101	0.1088	0.1074	0.1060	0.1047	0.1033	0.1020
900	0.1007	0.0995	0.0982	0.0970	0.0957	0.0945	0.0933	0.0921	0.0910	0.0898
950	0.0887	0.0876	0.0864	0.0854	0.0843	0.0832	0.0822	0.0811	0.0801	0.0791

The half-life values stated are as of time of publication. MDS Nordion values may vary.

**Corporate Headquarters:**

447 March Road  
Ottawa, ON, Canada K2K 1X8  
Tel: +1 613 592 2790  
Fax: +1 613 592 6937  
isotopeorders@mdsinc.com  
www.mdsnordion.com

**Regional Office:**

4004 Wesbrook Mall  
Vancouver, BC, Canada V6T 2A3  
Tel: +1 604 228 8952  
Fax: +1 604 228 5990

**European Office:**

Zoning Industriel  
Avenue de l'Espérance  
B-6220 Fleurus, Belgium  
Tel: +32 71 82 35 67  
Fax: +32 71 82 36 66