

Feb. 20, 1991

SNO-STR-91-15

The attached three pages list selected gamma-spectrometric analyses of materials related to construction of the detector system for the SNO Collaboration. These analyses were performed over the past 18 months at the LBL Low Background Facility (LBF), using an NaI(Tl) scintillation crystal gamma-spectrometer.

A more comprehensive list is being compiled, which extends over a longer time period and includes analyses of materials relevant to SNO but counted for other immediate purposes.

Alan R. Smith
Donna L. Hurley

Gamma-Spectrometric Analyses for SNO Collaboration: NaI(Tl) Results, 2/91

<u>Sample Type and Description</u>	<u>Equlv. U ppm</u> <u>(Ra-226)</u>		<u>Equlv. Th ppm</u> <u>(Th-228)</u>		<u>Potassium %</u> <u>(K-40)</u>		<u>Detector/Run#</u>	
Cables								
Coaxial (black), Belden M 9067	.038	.003	.11	.01	ND	.001	NaI	39069
Neoprene waterproof connector(M&F)	.73	.02	3.23	.06	.054	.003	NaI	38652
Dye pellets (6 colors)	.088	.011	.27	.04	ND	.002	NaI	39068
Dye pellets, green	.97	.12	1.5	.4	ND	.02	NaI	39075
Dye pellets, red	1.6	.2	ND	.6	ND	.03	NaI	39076
Dye pellets, blue	.9	.2	2.6	.5	ND	.02	NaI	39077
Dye pellets, orange	.8	.1	.8	.3	ND	.07	NaI	39078
Aluminum (reflectors)								
"Omega" special	ND	.007	.55	.02	ND	.006	NaI	38726
Anodizing blanks, 1/8" thick	ND	.005	.40	.02	ND	.001	NaI	38894
Anodized (all colors), 1/8" thick	ND	.003	.38	.01	ND	.005	NaI	38895
Powder paint, green	.48	.04	2.77	.12	.81	.01	NaI	38888
Powder paint, yellow	.068	.027	.26	.09	ND	.004	NaI	38889
Powder paint, red	ND	.05	ND	.15	ND	.007	NaI	38890
Powder paint, black	.068	.024	ND	.08	ND	.004	NaI	38892
Polishing agents								
Substance II	.48	.08	1.1	.3	ND	.01	NaI	38828
Magnesium flouride	3.77	.12	1.2	.3	.05	.02	NaI	38837
Alumina rouge	.47	.01	2.55	.04	.016	.002	NaI	38704
Quartz powder, UHP-20	.047	.006	ND	.02	ND	.001	NaI	38935
Quartz powder, UHP-50	.190	.007	.087	.020	.127	.001	NaI	38936
Glass-making items								
Dysil F refractory	.131	.004	.292	.011	.0037	.0005	NaI	38781
Dysil F refractory	.165	.003	.318	.009	.0033	.0005	NaI	39074
Alumina grinding balls (85%)	1.12	.11	2.4	.3	.05	.02	NaI	39103
Alumina grinding balls (99+%)	1.05	.14	2.2	.4	ND	.02	NaI	39104

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Epoxy/Fiberglass Composition								
MMFG EXTREN 525 (hollow beam)	1.13	.01	3.84	.03	.010	.001	NaI	39047
MMFG EXTREN 525 (hollow beam)	1.17	.01	3.94	.03	.010	.001	NaI	39048
Epoxy/Fiberglass Circuit Board								
G-10, 1/16" thick	2.10	.01	8.36	.04	.049	.002	NaI	39088
NEMA FR-4, 1/8" thick	.93	.01	3.67	.02	.027	.001	NaI	39079
NEMAG-10, 1/8" thick	.94	.02	6.91	.07	.047	.003	NaI	39052
NEMAG-10, 9/16" thick	1.55	.01	6.20	.04	.039	.002	NaI	39051
Epoxy, Cast								
ABOCAST50-3/50-17	.012	.002	.032	.006	ND	.0002	NaI	39050
Plastics, Various								
ABS, white, 1/8" thick	.032	.005	ND	.016	.004	.001	NaI	39081
ABS, black, 1/8" thick	.020	.005	ND	.016	.006	.001	NaI	39080
Lexan, 1/16" thick	.010	.004	ND	.012	ND	.0005	NaI	39049
"Plexiglas", 3/16" thick	.013	.004	ND	.014	ND	.0007	NaI	39082
Polyethylene, 1/4" thick	.023	.005	ND	.015	ND	.0007	NaI	39083
Polypropylene, 1/4" thick	.025	.005	ND	.017	ND	.0007	NaI	39109
TORLON-4203, poly(amide-imide)	ND	.007	.068	.023	ND	.001	NaI	39053

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Glasses								
"Oxford" special	ND	.004	.033	.012	ND	.0006	NaI	38938
Corning #7052	.84	.01	.62	.03	3.01	.01	NaI	39003
HAM-8", bases with pins	2.05	.03	.63	.09	2.11	.01	NaI	38897
HAM-20", bases with pins	2.11	.06	.78	.18	2.01	.01	NaI	38995
HAM-20", bases with pins	1.46	.07	.60	.19	1.46	.07	NaI	38991
HAM-20", milk glass rings	1.31	.12	.71	.34	1.56	.03	NaI	38990
HAM-8", milk glass bases	1.70	.02	.75	.06	1.86	.01	NaI	39122
Ceramic Additives								
R&W, CERNE/125	1.01	.01	1.3	.3	ND	.02	NaI	39058
R&W, MgO, SiO ₂ , CaCO ₃	.42	.04	ND	.1	ND	.006	NaI	39067
Miscellaneous Materials								
Salt, Morton iodized	ND	.006	.05	.02	.008	.001	NaI	39005
"Salt, Leslie iodized	.021	.006	ND	.02	ND	.001	NaI	39006
K-Monel, EC 500	ND	.002	ND	.007	ND	.0003	NaI	39084