

ORNL Evaluation Submittal Notes for ⁵⁸Ni, ⁶⁰Ni, ⁵²Cr, ⁵³Cr, ⁴⁶Ti, ⁴⁷Ti, ⁴⁹Ti, and ⁵⁰Ti
October 28, 2009

Ni58 (filename: ni58.ornl3_new)

No ENDF/A file exists, and the new evaluation has been merged with the ENDF/B-VII.0 evaluation.

The following changes are applied with respect to ENDF/B-VII.0:

File 1:

Additional information concerning the new evaluation and updated directory listing

File 2:

Complete new evaluation. The energy range of the resolved resonance data is unchanged.

File 3:

MT 1: Direct capture component has been added in the energy range up to 8.12×10^5 eV. For higher energies MT 1 data are unchanged.

MT 102: Direct capture component has been added in the energy range up to 8.12×10^5 eV. For higher energies MT 102 data are unchanged.

File 32:

Added resonance parameter covariance information

File 33:

MT1: Added covariance information due to direct capture and normalization.

MT 2: Added covariance information due to normalization.

MT 102: Added covariance information due to direct capture and normalization.

Note: sequence numbers have been updated with BNL code stanef and the file has been checked with the BNL checking code checkr. Please note that stanef sets all sequence number above 99998 to 99999. The checking code reports this as an error.

ORNL has processed the evaluation with AMPX using the SCALE 44-group structure and a 1/E weighting. A multi-group library and group-averaged covariance matrices has been generated. The covariance matrices are plotted in **file ni58.ornl3_new.pdf** that has been submitted to NNDC with the new evaluation.

Ni60 (filename: ni60.ornl3_new)

No ENDF/A file exists, and the new evaluation has been merged with ENDF/B-VII.0.

The following changes are applied with respect to ENDF/B-VII.0:

File 1:

Additional information concerning the new evaluation and updated directory listing

File 2:

Complete new evaluation. The energy range of the resolved resonance data is extended to 812 keV.

File 3:

MT 1: Direct capture component has been added in the energy range up to 812 keV. For higher energies MT 1 data are unchanged.

MT 2: Cross section below 812 keV has been set to zero. For higher energies MT 2 data are unchanged.

MT 102: Direct capture component has been added in the energy range up to 812 keV. For

higher energies MT 102 data are unchanged.

File 32:

Added resonance parameter covariance information

File 33:

MT1: Added covariance information due to direct capture and normalization up to

MT 2: Added covariance information due to normalization.

MT 102: Added covariance information due to direct capture and normalization.

Note: sequence numbers have been updated with BNL code stanef and the file has been checked with the BNL checking code checkr. Please note that stanef sets all sequence number above 99998 to 99999. The checking code reports this as an error.

ORNL has processed the evaluation with AMPX using the SCALE 44-group structure and a 1/E weighting. A multi-group library and group-averaged covariance matrices has been produced. The covariance matrices are plotted in **file ni60.ornl3_new.pdf** that has been submitted to NNDC with the new evaluation.

Cr52 (filename: cr52worklib.dat_new)

The Cr52 evaluation is a completely new full-energy range evaluation that has been prepared by ORNL in collaboration with FZK. A partial ENDF/A file exists but is not considered for this ENDF evaluation.

Note: sequence numbers have been updated with BNL code stanef and the file has been checked with the BNL checking code checkr. Please note that stanef sets all sequence number above 99998 to 99999. The checking code reports this as an error.

ORNL has processed the evaluation with AMPX using the SCALE 44-group structure and a 1/E weighting. A multi-group library and group-averaged covariance matrices have been produced. The covariance matrices are plotted in **files cr52.ornl_new_1.pdf and cr52.ornl_new_2.pdf**. These files have been submitted to NNDC with the new evaluation.

Cr53 (filename: cr53worklib.dat_new)

A partial ENDF/A file exists. However, ORNL has prepared the Cr53 evaluation based on the ENDF/B-VII.0 evaluation that is a complete file relative to the partial evaluation in ENDF/A. The following changes are applied with respect to ENDF/B-VII.0:

The following changes are applied with respect to ENDF/B-VII.0:

File 1:

Additional information concerning the new evaluation and updated directory listing

File 2:

Complete new evaluation. The energy range of the unresolved data is extended to $5.64 \times 10^{+5}$ eV.

File 3:

MT 1: Direct capture component has been added in the energy range up to $5.64 \times 10^{+5}$ eV. For higher energies MT 1 data are unchanged.

MT 2: Cross section below $5.64 \times 10^{+5}$ eV has been set to zero. For higher energies MT 2 data are unchanged.

MT 3: Cross section below $5.64 \times 10^{+5}$ eV has been set to zero. For higher energies MT 3 data

are unchanged.

MT 102: Direct capture component has been added in the energy range up to $4.5 \times 10^{+5}$ eV. For higher energies MT 102 data are unchanged.

File 32:

Added resonance parameter covariance information

Note: sequence numbers have been updated with BNL code stanef and the file has been checked with the BNL checking code checkr. Please note that stanef sets all sequence number above 99998 to 99999. The checking code reports this as an error.

ORNL has processed the evaluation with AMPX using the SCALE 44-group structure and 1/E weighting. A multi-group library and group-averaged covariance matrices have been produced. The covariance matrices are plotted in **file cr53.ornl_new.pdf** that has been submitted to NNDC with the new evaluation.

Ti46 (ti46endfbvii.0cov.dat_endfa)

For this evaluation, ORNL performed a retroactive covariance evaluation for the resonance region. ORNL merged the new covariance evaluation with the new high-energy evaluation provided by LANL in ENDF/A.

The following changes are applied with respect to the ENDF/A LANL evaluation:

File 1:

Additional information concerning the new evaluation and updated directory listing

File 2:

Taken from File 2 in ENDF/B-VII.0 except for the following changes:

One resonance that has been corrected. This is noted in the File 1 description.

The range has been changed to be consistent with the range in the File 2 from ENDF/A

File 32:

Added resonance parameter covariance information

ORNL has processed the evaluation with AMPX using the SCALE 44-group structure and 1/E weighting. A multi-group library and group-averaged covariance matrices have been produced. The covariance matrices are plotted in **file ti46.ornl_endfa.pdf** that has been submitted to NNDC with the new evaluation.

Ti47 (filename: ti47endfbvii.0cov.dat_endfa)

For this evaluation, ORNL performed a retroactive covariance evaluation for the resonance region. ORNL merged the new covariance evaluation with the new high-energy evaluation provided by LANL in ENDF/A.

The following changes are applied with respect to the ENDF/A LANL evaluation:

File 1:

Additional information concerning the new evaluation and updated directory listing

File 2:

Taken from File 2 in ENDF/B-VII.0 except for the following changes:

The range has been changed to be consistent with the range in the File 2 from ENDF/A

File 32:

Added resonance parameter covariance information

ORNL has processed the evaluation with AMPX using the SCALE 44-group structure and 1/E weighting. A multi-group library and group-averaged covariance matrices have been produced. The covariance matrices are plotted in **file ti47.ornl_endfa.pdf** that has been submitted to NNDC with the new evaluation.

Ti49 (filename: ti49endfbvii.0cov.dat_endfa)

For this evaluation, ORNL performed a retroactive covariance evaluation for the resonance region. ORNL merged the new covariance evaluation with the new high-energy evaluation provided by LANL in ENDF/A.

The following changes are applied with respect to the ENDF/A LANL evaluation:

File 1:

Additional information concerning the new evaluation and updated directory listing

File 2:

Taken from File 2 in ENDF/B-VII.0 except for the following changes:

The range has been changed to be consistent with the range in the File 2 from ENDF/A

File 32:

Added resonance parameter covariance information

ORNL has processed the evaluation with AMPX using the SCALE 44-group structure and 1/E weighting. A multi-group library and group-averaged covariance matrices have been produced. The covariance matrices are plotted in **file ti49.ornl_endfa.pdf** that has been submitted to NNDC with the new evaluation.

Ti50 (filename: ti49endfbvii.0cov.dat_endfa)

For this evaluation, ORNL performed a retroactive covariance evaluation for the resonance region. ORNL merged the new covariance evaluation with the new high-energy evaluation provided by LANL in ENDF/A.

The following changes are applied with respect to the ENDF/A LANL evaluation:

File 1:

Additional information concerning the new evaluation and updated directory listing

File 2:

Taken from File 2 in ENDF/B-VII.0 except for the following changes:

The range has been changed to be consistent with the range in the File 2 from ENDF/A

File 32:

Added resonance parameter covariance information

ORNL has processed the evaluation with AMPX using the SCALE 44-group structure and 1/E weighting. A multi-group library and group-averaged covariance matrices are produced. The covariance matrices are plotted in **file ti50.ornl_endfa.pdf** that has been submitted to NNDC with the new evaluation.