Quality Flags

All data values in the IDP2021 have a quality flag associated with them. Quality flags are single character codes reflecting the quality of the respective data value.

Documentation of the assessed quality of data values in form of quality flags is important. One of the benefits is that there is no need to remove questionable or suspected data values from datasets. Instead, such values should be kept in the dataset, with the added quality flag informing users of the suspected poor quality. Many data analysis and visualization software packages, including Ocean Data View, make use quality flags and allow data filtering by quality flag. There are numerous examples in the history of science when data initially removed from datasets because of suspected poor quality later turned out to be correct. Removing data may lead to permanent loss of potentially important information.

The IDP2021 uses the SEADATANET quality flag scheme (http://vocab.nerc.ac.uk/collection/L20/current/) containing the following flag values:

Value	Flag short name	Definition
0	no quality control	No quality control procedures have been applied to the data value. This is the initial status for all data values entering the working archive.
1	good value	Good quality data value that is not part of any identified malfunction and has been verified as consistent with real phenomena during the quality control process.
2	probably good value	Data value that is probably consistent with real phenomena but this is unconfirmed or data value forming part of a malfunction that is considered too small to affect the overall quality of the data object of which it is a part.
3	probably bad value	Data value recognised as unusual during quality control that forms part of a feature that is probably inconsistent with real phenomena.
4	bad value	An obviously erroneous data value.
5	changed value	Data value adjusted during quality control. Best practice strongly recommends that the value before the change be preserved in the data or its accompanying metadata.
6	value below detection	The level of the measured phenomenon was less than the limit of detection (LoD) for the method employed to measure it. The accompanying value is the detection limit for the technique or zero if that value is unknown.
7	value in excess	The level of the measured phenomenon was too large to be quantified by the technique employed to measure it. The accompanying value is the measurement limit for the technique.
8	interpolated value	This value has been derived by interpolation from other values in the data object.
9	missing value	The data value is missing. There should be no accompanying value in ODV format files. The accompanying value in SeaDataNet NetCDF data must be the absent data representation specified by the _ FillValue parameter attribute and lie outside the range of data not flagged bad (4) or probably bad (3).
A	value phenomenon uncertain	There is uncertainty in the description of the measured phenomenon associated with the value such as chemical species or biological entity.
B	nominal value	The data value is a numerical data value that was the intended or targeted value rather than the measured value (e.g. instrument target depth).
Q	value below limit of quantification	The level of the measured phenomenon was less than the limit of quantification (LoQ). The accompanying value is the limit of quantification for the analytical method.