**Overview**

See Product Description

**Layers**

Science Data Sets for MODIS Terra Vegetation Indices 16-Day L3 Global 1km SIN Grid V005 (MOD13A2):

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Science Data Sets (HDF Layers) (12)** | **UNITS** | **BIT TYPE** | **FILL** | **VALID RANGE** | **MULTIPLY BY SCALE FACTOR** |
| 1km 16 days NDVI | NDVI | 16-bit signed integer | -3000 | -2000, 10000 | 0.0001 |
| 1km 16 days EVI | EVI | 16-bit signed integer | -3000 | -2000, 10000 | 0.0001 |
| 1km 16 days VI Quality detailed QA | Bits | 16-bit unsigned integer | 65535 | 0, 65534 | NA |
| 1km 16 days red reflectance (Band 1) | Reflectance | 16-bit signed integer | -1000 | 0, 10000 | 0.0001 |
| 1km 16 days NIR reflectance (Band 2) | Reflectance | 16-bit signed integer | -1000 | 0, 10000 | 0.0001 |
| 1km 16 days blue reflectance (Band 3) | Reflectance | 16-bit signed integer | -1000 | 0, 10000 | 0.0001 |
| 1km 16 days MIR reflectance (Band 7) | Reflectance | 16-bit signed integer | -1000 | 0, 10000 | 0.0001 |
| 1km 16 days view zenith angle | Degree | 16-bit signed integer | -10000 | -9000, 9000 | 0.01 |
| 1km 16 days sun zenith angle | Degree | 16-bit signed integer | -10000 | -9000, 9000 | 0.01 |
| 1km 16 days relative azimuth angle | Degree | 16-bit signed integer | -4000 | -3600, 3600 | 0.1 |
| 1km 16 days composite day of the year | Julian day of year | 16-bit signed integer | -1 | 1, 366 | NA |
| 1km 16 days pixel reliability summary QA | Rank | 8-bit signed integer | -1 | 0, 4 | NA |

The QA information below is excerpted from the Quality Science Data Set within an HDF-EOS MOD13A2 file.

A summary Quality layer has been included in the MOD13A2: “pixel reliability.” This layer contains ranked values describing overall pixel quality (Table 1 below).

Because evaluation of the past 6 years of V003 and V004 data collections revealed insignificant differences between the Quality assignments for NDVI versus EVI, the V005 MOD13 products include a single Quality layer pertinent to both indices (Table 2 below), rather than one layer for each. This reduces data volume as well as user confusion with multiple Quality layers.

TABLE 1: MOD13A2 Pixel Reliability

|  |  |  |
| --- | --- | --- |
| **Rank Key** | **Summary QA** | **Description** |
| -1 | Fill/No Data | Not Processed |
| 0 | Good Data | Use with confidence |
| 1 | Marginal data | Useful, but look at other QA information |
| 2 | Snow/Ice | Target covered with snow/ice |
| 3 | Cloudy | Target not visible, covered with cloud |

TABLE 2: MOD13A2 VI Quality

Bit 0 is the least significant (read bit words right to left)

|  |  |  |  |
| --- | --- | --- | --- |
| **bit** | **Long Name** | **Value** | **Key** |
| 0–1 | MODLAND\_QA | 00 | VI produced, good quality |
| 01 | VI produced, but check other QA |
| 10 | Pixel produced, but most probably cloudy |
| 11 | Pixel not produced due to other reasons than clouds |
| 2–5 | VI usefulness | 0000 | Highest quality |
| 0001 | Lower quality |
| 0010 | Decreasing quality |
| 0100 | Decreasing quality |
| 1000 | Decreasing quality |
| 1001 | Decreasing quality |
| 1010 | Decreasing quality |
| 1100 | Lowest quality |
| 1101 | Quality so low that it is not useful |
| 1110 | L1B data faulty |
| 1111 | Not useful for any other reason/not processed |
| 6–7 | Aerosol quantity | 00 | Climatology |
| 01 | Low |
| 10 | Average |
| 11 | High |
| 8 | Adjacent cloud detected | 1 | Yes |
| 0 | No |
| 9 | Atmosphere BRDF correction performed | 1 | Yes |
| 0 | No |
| 10 | Mixed Clouds | 1 | Yes |
| 0 | No |
| 11–13 | Land/Water Flag | 000 | Shallow ocean |
| 001 | Land (Nothing else but land) |
| 010 | Ocean coastlines and lake shorelines |
| 011 | Shallow inland water |
| 100 | Ephemeral water |
| 101 | Deep inland water |
| 110 | Moderate or continental ocean |
| 111 | Deep ocean |
| 14 | Possible snow/ice | 1 | Yes |
| 0 | No |
| 15 | Possible shadow | 1 | Yes |
| 0 | No |

**SPOT NDVI information**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SM | Status Map | Data about Bit NR 7: Radiometric quality for B0 coded as 0 if bad and 1 if good Bit NR 6: Radiometric quality for B2 coded as 0 if bad and 1 if good Bit NR 5: Radiometric quality for B3 coded as 0 if bad and 1 if good Bit NR 4: Radiometric quality for MIR coded as 0 if bad and 1 if good Bit NR 3: land code 1 or water code 0 Bit NR 2: ice/snow code 1 , code 0 if there is no ice/snow | | | | |  | HDF | P/S |
| Bit NR 1: | 0 | 0 | 1 | 1 |  |
| Bit NR 0: | 0 | 1 | 0 | 1 |
|  | clear | shadow | uncertain | cloud |