

Name	Water vapour above land and sea, clear sky
Summary	Water vapour derived from MERIS observations at global scale
Identifier	L3_ENV_MER_WVCS_
Name convention	<p>Lz_SAT_INS_PRD_TC_TP_yyyymmdd_ZONE_PRJ_PRC_SRLATxSRLON_lm+IM+Lm+LM_xxxx where:</p> <ol style="list-style-type: none"> 1. Lz is the product level (L3 for level 3, L4 for combined instrument products) 2. SAT is the satellite acronym (ENV for ENVISAT, SEA for SeaStar, Nxx for NOAA 15, 16 or 17, null for L4 product) 3. INS is the instrument acronym (MER for MERIS, SWF for SeaWiFS, AVH for AVHRR, null for L4 product) 4. PRD is the product type (WVLS for Water vapour) 5. TC is the time coverage (i for instantaneous, j for daily, w for weekly, d for decadal, m for monthly, y for yearly, n for products accumulated on n days or s for accumulation on sliding periods) 6. TP is the time position of the product during the day (not used except for AVHRR products: MO for morning, NO for noon, EV for evening, NI for night) 7. yyyymmdd is the first day of the considered time period 8. ZONE is the name of the area of interest (GLOB for global coverage, EURO for Europe, ...) 9. PRJ is the projection (SI for sinusoidal, PC for plate-carrée, ...) 10. PRC is the processing centre (ACR for ACRI) 11. SRLATxSRLON is the spatial resolution along latitude and longitude in meters taken at the equator for GLOB or at the center of the product for regional product 12. lm+IM+Lm+LM : is the area covered by the product : latitudes min, max, longitudes min, max. 13. xxxx is equal to 0001 for the average value product
Name Example	L3_ENV_MER_WVCS_d__20030701_GLOB_SI_ACR_9277x9277_-90+90+-180+180_0001 with extension based on format (e.g. .jpg for JPEG, .nc for netCDF, .hdf for HDF, .xml for XML, ...)
Product level	3
Description	Water vapour above land and sea

<p>Level 2 Algorithm short description</p>	<p>The level 2 algorithm exploits two dedicated MERIS channels. The first one, channel 15 centred at 900 nm, is strongly affected by water vapour absorption, while the second, channel 14 centred at 885 nm, is outside the absorption region and serves as a reference.</p> <p>The general algorithm approach is to relate the columnar water vapour content to the ratio of MERIS channels 14 and 15. The general form of the retrieval algorithms is</p> $W = k_0 + k_1 \log\left(\frac{L_{Ch15}}{L_{Ch14}}\right) + k_2 \log^2\left(\frac{L_{Ch15}}{L_{Ch14}}\right)$ <p>where W is the column amount of water vapour, L_{Ch14} and L_{Ch15} are the radiances measured in MERIS channels 14 and 15, and k_0, k_1 and k_2 are regression constants. This simple model is based on the assumption that a logarithmical relation between the absorber mass and extinction exists. The regression coefficients are derived by inverting results of radiative transfer simulations. In any case the regression constants depend on observation geometry but additional dependencies have been introduced to account for phenomenon specific to the underlying surface. For retrieval over ocean, they additionally depend on aerosol optical depth, derived from MERIS atmospheric correction channels 9, 12, and 13. For land surfaces, the regression constants additionally depend on surface pressure, to account for the pressure broadening of the absorption lines.</p> <p><u>See :</u></p> <p>➤ http://envisat.esa.int/instruments/meris/pdf/atbd_2_04.pdf</p>
<p>Level 3 Algorithm short description</p>	<p>The level 3 algorithm can be briefly described as :</p> $AVG_i = \frac{1}{N_p} \sum_{n=1}^{N_p} W_n$ <p>Where N_p is the number of valid pixels (i.e. assessed as of good quality, classified as land or water) in the cell i. Similar data-day definition as AVHRR-SeaWiFS</p>

References	Level 2 Processing version : MEGS 7.4 Level 3 Processing version : mklv3 3.2 "MERIS level 2 DPM", issue 7.2, June 2005
Unit	g.cm ⁻²
Range	[0,7]
Accuracy	Relative about 10% over land and 20% over water (validation in progress may revise these numbers)
Format	Image: JPEG, data: NetCDF, geotiff, metadata: XML
Resolution	One twelfth of a degree in both latitude and longitude at the equator
Product characteristics	Product : MERIS water vapour mean quantity Auxiliary products: index of the bins, standard deviation, number of data per pixel, min, max
Distribution	http://www.globcolour.info/
Validation References	See : <ul style="list-style-type: none"> ➤ http://envisat.esa.int/instruments/meris/pdf/atbd_2_04.pdf ➤ http://www.enviport.org/meris/docs/GPS-MERIS-WV.pdf