MIRAI **MR14-04 Leg2 Bottle Sampling Water Chemical Analysis**

Last Modified: 2023/09/06

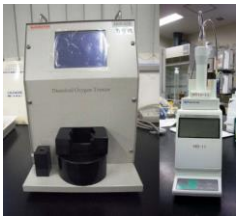
For Using Data	
Data Policy	JAMSTEC
Principal Investigator	See "Quality information"
Use Constraints	See Terms and Conditions about constrain of use.
Data Citation	See Terms and Conditions about data citation.

Quality PI-Processed

Instrument

Salinity measurement system

Titrator for DO Dissolved oxygen titration equipment (MR11-06 -)



Nutrient analyzer(5ch) (MR09-02 -)

Total dissolved inorganic carbon measurement system (MR11-05 -)

Titrator for total alkalinity (MR14-03 -)

Fluorometer (TURNER DESIGNS)

Gas chromatograph

Quality information

Quality control was carried out by ;

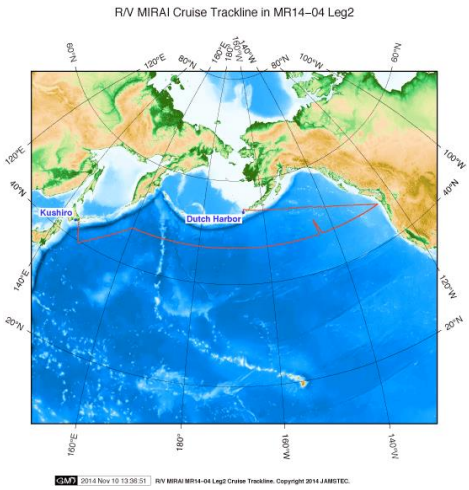
DATA_ID	Name
CTD/O2, SBE35, XMISS, FLUOR, PAR	Hiroshi Uchida (JAMSTEC)
SALNTY, DNSSAL,	Hiroshi Uchida (JAMSTEC)
OXYGEN	Yuichiro Kumamoto (JAMSTEC)
CHLORA, CDOM	Kosei Sasaoka (JAMSTEC)
Nutrients	Michio Aoyama (Fukushima University / JAMSTEC)
TCARBON, ALKALI, pH	Akihiko Murata (JAMSTEC)
CFCs, SF6	Kenichi Sasaki (JAMSTEC)
Calcium	Yoshihiro Shinoda (JAMSTEC)
DOC	Takeshi Yoshimura (CRIEPI)
DELC13, DELC14, Cs134, Cs137, I129	Yuichiro Kumamoto (JAMSTEC)

About this data

For details about observation, please refer to the Data book "WHP P01 REVISIT IN 2014 DATA BOOK" (ISBN 978-4-901833-22-6) and Cruise Report.

2023/09/05 Updated data flags of CFCs and SF6.

Related Information



MR14-04 Leg2

Ship Name:	MIRAI
Period:	2014/07/17 - 2014/08/29
Chief Scientist:	Hiroshi Uchida (JAMSTEC)
Proposal:	Heat and material transport and their changes in the ocean general circulation

Collaborative study on the zonal distribution of dissolved organic carbon in the far North Pacific

Investigation for the relationship among primary production, ocean circulation and deep-sea microbial ecosystems

Investigation for the trench biosphere in the Chishima Trench and biogeography of deep-sea microbes in the north Pacific

Applied research of MIRAI brand-new shipboard weather radar: Validation and utilization of dual-polarization information for global deployment

Global distribution of drop size distribution of precipitating particles over pure-oceanic background

Changes in calcification responses of marine planktonic organisms and pH in the subarctic North Pacific

Aerosol optical characteristics measured by Ship-borne Sky radiometer

Activity concentrations of Fukushima-derived radiocesium in oceanic zooplankton

Standardisation of marine geophysical data and its application to geodynamics studies

The study of the ocean circulation and the transport of heat and fresh water in the Pacific Ocean using by Argo floats

Advanced continuous measurements of aerosols in the marine atmosphere: Elucidation of the roles in the Earth system

Estimation of hazardous chemicals discharge form the melting ice in the Arctic Ocean

Biogeochemical cycles of biogenic greenhouse gases in the North Pacific

Bottle Sampling Water Chemical Analysis (Exchange Format)

Provided in the Exchange Format of CCHDO (CLIVAR and Carbon Hydrographic Data Office). Please see the following url for details of Exchange Format.
* https://cchdo.ucsd.edu/formats

Exchange Format

No.	Content	Format	Remarks
1	EXPOCODE		ExpoCode
2	SECT		Section ID
3	STNNBR		Station Number
4	CASTNO		Cast Number
5	SAMPNO		Sample Number
6	BTLNBR		Bottle Number
7	BTLNBR_FLAG_W		Bottle quality flags
8	DATE		Cast date
9	TIME	UTC	Cast time
10	LATITUDE	DEG	Latitude
11	LONGITUDE	DEG	Longitude
12	DEPTH	METERS	Bottom depth
13	CTDPRS	DBAR	Pressure
14	CTDPRS_FLAG_W		Quality flags for CTD data
15	CTDTMP	ITS-90	Temperature
16	CTDTMP_FLAG_W		Quality flags for CTD data
17	SBE35	ITS-90	Temperature from Deep Ocean Standards Thermometer
18	SBE35_FLAG_W		Quality flags for CTD data
19	CTDSAL	PSS-78	CTD-Salinity
20	CTDSAL_FLAG_W		Quality flags for CTD data
21	SALNTY	PSS-78	Bottle Salinity
22	SALNTY_FLAG_W		Quality flags for CTD data
23	DNSSAL	G/KG	Quality-controlled density salinity data
24	DNSSAL_FLAG_W		Quality flags for CTD data
25	CTDOXY	UMOL/KG	CTD-Oxygen
26	CTDOXY_FLAG_W		Quality flags for CTD data
27	OXYGEN	UMOL/KG	Bottle Oxygen
28	OXYGEN_FLAG_W		Quality flags for water samples
29	XMISS	%TRANS	Transmissometer
30	XMISSCP	/METER	Beam attenuation coefficient
31	XMISS_FLAG_W		Quality flags for CTD data
32	FLUOR	MG/CUM	Fluorescence
33	FLUOR_FLAG_W		Quality flags for CTD data
34	CHLORA	MG/CUM	Chlorophyll a
35	CHLORA_FLAG_W		Quality flags for water samples
36	CDOM	MG/CUM	Absorption coefficient of CDOM
37	CDOM_FLAG_W		Quality flags for water samples
38	PAR	UE/SQM/S	PAR
39	PAR_FLAG_W		Quality flags for CTD data
40	SILCAT	UMOL/KG	Silicate
41	SILCAT_FLAG_W		Quality flags for water samples
42	SILUNC	UMOL/KG	Uncertainty of Silicate data
43	NITRAT	UMOL/KG	Nitrate
44	NITRAT_FLAG_W		Quality flags for water samples
45	NRAUNC	UMOL/KG	Uncertainty of Nitrate data
46	NITRIT	UMOL/KG	Nitrite

47	NITRIT_FLAG_W		Quality flags for water samples
48	NRIUNC	UMOL/KG	Uncertainty of Nitrite data
49	PHSPHT	UMOL/KG	Phosphate
50	PHSPHT_FLAG_W		Quality flags for water samples
51	PHPUNC	UMOL/KG	Uncertainty of Phosphate data
52	AMMONIA	UMOL/KG	Ammonium
53	AMMONIA_FLAG_W		Quality flags for water samples
54	NH4UNC	UMOL/KG	Uncertainty of Ammonium data
55	CFC-11	PMOL/KG	CFC-11
56	CFC-11_FLAG_W		Quality flags for water samples
57	CFC-12	PMOL/KG	CFC-12
58	CFC-12_FLAG_W		Quality flags for water samples
59	CFC113	PMOL/KG	CFC113
60	CFC113_FLAG_W		Quality flags for water samples
61	SF6	FMOL/KG	Sulfur Hexifluoride
62	SF6_FLAG_W		Quality flags for water samples
63	TCARBN	UMOL/KG	Total Carbon
64	TCARBN_FLAG_W		Quality flags for water samples
65	ALKALI	UMOL/KG	Total alkalinity (spectrophotometry)
66	ALKALI_FLAG_W		Quality flags for water samples
67	ALKALI_POT	UMOL/KG	Total alkalinity (potenciometry)
68	ALKALI_POT_FLAG_W		Quality flags for water samples
69	PH_TOT		pH (total scale)
70	PH_TMP	DEG C	pH analyzing temperature
71	PH_TOT_FLAG_W		Quality flags for water samples
72	CALCIUM	MMOL/KG	Calcium
73	CALCIUM_FLAG_W		Quality flags for water samples
74	DOC	UMOL/KG	Dissolved organic carbon
75	DOC_FLAG_W		Quality flags for water samples
76	DELC13	/MILLE	Delta Carbon 13
77	DELC13_FLAG_W		Quality flags for water samples
78	C13ERR	/MILLE	Delta Carbon 13 error
79	DELC14	/MILLE	Delta Carbon 14
80	DELC14_FLAG_W		Quality flags for water samples
81	C14ERR	/MILLE	Delta Carbon 14 error
82	CS-134	MBQ/KG	Cesium 134
83	CS-134_FLAG_W		Quality flags for water samples
84	CS134ER	MBQ/KG	Cesium 134 error
85	CS-137	MBQ/KG	Cesium 137
86	CS-137_FLAG_W		Quality flags for water samples
87	CS137ER	MBQ/KG	Cesium 137 error
88	I-129		Iodine 129
89	I-129_FLAG_W		Quality flags for water samples
90	I-129ER		Iodine 129 error
91	CDOM-325	/METER	Absorption coefficient of CDOM at 325nm
92	CDOM-325_FLAG_W		Quality flags for water samples
93	CDOM-370	/METER	Absorption coefficient of CDOM at 370nm
94	CDOM-370_FLAG_W		Quality flags for water samples
95	CDOM-443	/METER	Absorption coefficient of CDOM at 443nm
96	CDOM-443_FLAG_W		Quality flags for water samples

Definition of Quality Control Flags for Bottle Data

1. Bottle quality flags

Exchange
1 = Bottle information unavailable.
2 = No problems noted.
3 = Leaking.
4 = Did not trip correctly.
5 = Not reported.
7 = Unknown problem.
9 = Samples not drawn from this bottle.

2. Quality flags for water samples

Exchange
1 = Sample for this measurement was drawn from water bottle but analysis not received.
2 = Acceptable measurement.
3 = Questionable measurement.
4 = Bad measurement.
5 = Not reported.
6 = Mean of replicate measurements.
9 = Sample not drawn for this measurement from this bottle.

3. Quality flags definitions for CTD data

Exchange
1 = Not calibrated.
2 = Acceptable measurement.
3 = Questionable measurement.
4 = Bad measurement.
5 = Not reported.
6 = Interpolated.
7 = Despiked.
9 = Not sampled.