Comments from Public Consultation on ECV Requirements 13/01 – 13/03 2020 for:

# Ocean inorganic carbon

## ECV Product: Total alkalinity (TA)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Name** | Total alkalinity (TA) | | | | |
| **Definition** | total concentration of alkaline substances | | | | |
| **Unit** | μmol kg⁻¹ | | | | |
| **Note** |  | | | | |
| **Requirements** | | | | | |
| **Item needed** | **Unit** | **Metric** | **[1]** | **Value** | **Derivation and References and Standards** |
| **Horizontal Resolution** | km |  | G | 1000  Coastal: 100 |  |
| B |  |  |
| T | 2000  Coastal: 1000 |  |
| **Vertical Resolution** |  |  | G |  |  |
| B |  |  |
| T |  |  |
| **Temporal Resolution** |  |  | G | seasonal |  |
| B |  |  |
| T | decadal |  |
| **Timeliness** | Months |  | G | 6 |  |
| B |  |  |
| T | 12 |  |
| **Required Measurement Uncertainty** | μmol kg⁻¹ |  | G | 2 |  |
| B |  |  |
| T | 2 |  |
| **Stability** |  |  | G |  |  |
| B |  |  |
| T |  |  |
| **Standards and References** | Requirements based on characteristic scales and magnitude of signal of phenomena to observe. See the EOV Specification Sheet for details and references ([www.goosocean.org/eov](http://www.goosocean.org/eov)). Additional requirements based on the Global Ocean Data Assimilation Project (GLODAP; [www.glodap.info](http://www.glodap.info/)); for pH based on the Global Ocean Acidification Observing Network (GOA-ON) Implementation Strategy (<http://goa-on.org/about/strategy.php>); for pCO2 from the Surface Ocean CO2 Atlas (SOCAT; [www.socat.info](http://www.socat.info/)). | | | | |
| **Adaptation and Extremes** | | | | | |
|  | Relevant? (Yes/No) | Sugg. Req. sufficient? (Yes/No) | Explanation | | |
| **Adaptation[2]** |  |  |  | | |
| **Extremes[3]** |  |  |  | | |

[1]Goal (G); Breakthrough (B)(not mandatory, more as one possible); Threshold (T), for definitions see [Guidelines](http://tiny.cc/ecv-review)

[2] Is the ECV Product directly relevant to support Climate Adaptation?

[3] Can the ECV Product be used to monitor climate extremes or aspects of extremes?

NO COMMENT

## ECV Product: Dissolved inorganic carbon (DIC)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Name** | Dissolved inorganic carbon (DIC) | | | | |
| **Definition** | Sum of dissolved inorganic carbon species (CO₂, HCO⁻, CO3²⁻) in water | | | | |
| **Unit** | μmol kg⁻¹ | | | | |
| **Note** |  | | | | |
| **Requirements** | | | | | |
| **Item needed** | **Unit** | **Metric** | **[1]** | **Value** | **Derivation and References and Standards** |
| **Horizontal Resolution** | km |  | G | 1000  Coastal: 100 |  |
| B |  |  |
| T | 2000  Coastal: 1000 |  |
| **Vertical Resolution** |  |  | G |  |  |
| B |  |  |
| T |  |  |
| **Temporal Resolution** |  |  | G | seasonal |  |
| B |  |  |
| T | decadal |  |
| **Timeliness** | Months |  | G | 6 |  |
| B |  |  |
| T | 12 |  |
| **Required Measurement Uncertainty** | μmol kg⁻¹ |  | G | 2 |  |
| B |  |  |
| T | 2 |  |
| **Stability** |  |  | G |  |  |
| B |  |  |
| T |  |  |
| **Standards and References** | Requirements based on characteristic scales and magnitude of signal of phenomena to observe. See the EOV Specification Sheet for details and references ([www.goosocean.org/eov](http://www.goosocean.org/eov)). Additional requirements based on the Global Ocean Data Assimilation Project (GLODAP; [www.glodap.info](http://www.glodap.info/)); for pH based on the Global Ocean Acidification Observing Network (GOA-ON) Implementation Strategy (<http://goa-on.org/about/strategy.php>); for pCO2 from the Surface Ocean CO2 Atlas (SOCAT; [www.socat.info](http://www.socat.info/)). | | | | |
| **Adaptation and Extremes** | | | | | |
|  | Relevant? (Yes/No) | Sugg. Req. sufficient? (Yes/No) | Explanation | | |
| **Adaptation[2]** |  |  |  | | |
| **Extremes[3]** |  |  |  | | |

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NO COMMENT

## ECV Product: pCO₂

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Name** | pCO₂ | | | | |
| **Definition** | surface ocean partial pressure of CO₂ | | | | |
| **Unit** | μatm | | | | |
| **Note** |  | | | | |
| **Requirements** | | | | | |
| **Item needed** | **Unit** | **Metric** | **[1]** | **Value** | **Derivation and References and Standards** |
| **Horizontal Resolution** | km |  | G | 100 |  |
| B |  |  |
| T | 1000  Coastal: <1000 |  |
| **Vertical Resolution** |  |  | G |  |  |
| B |  |  |
| T |  |  |
| **Temporal Resolution** |  |  | G | monthly |  |
| B |  |  |
| T | decadal |  |
| **Timeliness** | Months |  | G | 6 |  |
| B |  |  |
| T | 12 |  |
| **Required Measurement Uncertainty** | μatm |  | G | 2 |  |
| B |  |  |
| T | 2 |  |
| **Stability** |  |  | G |  |  |
| B |  |  |
| T |  |  |
| **Standards and References** | Requirements based on characteristic scales and magnitude of signal of phenomena to observe. See the EOV Specification Sheet for details and references ([www.goosocean.org/eov](http://www.goosocean.org/eov)). Additional requirements based on the Global Ocean Data Assimilation Project (GLODAP; [www.glodap.info](http://www.glodap.info/)); for pH based on the Global Ocean Acidification Observing Network (GOA-ON) Implementation Strategy (<http://goa-on.org/about/strategy.php>); for pCO2 from the Surface Ocean CO2 Atlas (SOCAT; [www.socat.info](http://www.socat.info/)). | | | | |
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NO COMMENT

## ECV Product: pH

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Name** | pH | | | | |
| **Definition** | Ocean acidity | | | | |
| **Unit** | -log₁₀(hydrogen ion concentration in moles per litre) | | | | |
| **Note** |  | | | | |
| **Requirements** | | | | | |
| **Item needed** | **Unit** | **Metric** | **[1]** | **Value** | **Derivation and References and Standards** |
| **Horizontal Resolution** | km |  | G | 1000  Coastal: 100 |  |
| B |  |  |
| T | 2000  Coastal: 1000 |  |
| **Vertical Resolution** |  |  | G |  |  |
| B |  |  |
| T |  |  |
| **Temporal Resolution** |  |  | G | seasonal |  |
| B |  |  |
| T | decadal |  |
| **Timeliness** | Month |  | G | 6 |  |
| B |  |  |
| T | 12 |  |
| **Required Measurement Uncertainty** |  |  | G | 0.003 |  |
| B |  |  |
| T | 0.003 |  |
| **Stability** |  |  | G |  |  |
| B |  |  |
| T |  |  |
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