

Specification for CO₂ supplied to Aramis via:

Class	Component	Constraint	unit	Ships	Pipeline infrastructure
	CO ₂	larger than	mol%	balance	95
	H ₂ O	less than	ppmmol	30	70 ⁽¹⁾
inerts	N ₂	less than	mol%	-	2.4
	O ₂	less than	ppmmol	10	40
	H ₂	less than	ppmmol	500	7500
	Ar	less than	mol%	-	0.4
	CH ₄	less than	mol%	-	1
	CO	less than	ppmmol	1200	750
	O ₂ +N ₂ +H ₂ +Ar+CH ₄ +CO	sum less than	ppmmol	2000	40000
		NO _x	sum less than	ppmmol	1.5
sulphur	SO _x	sum less than	ppmmol	10	-
	H ₂ S	less than	ppmmol	5	5
	CarbonylSulphide	less than	ppmmol	-	-(¹)
	DimethylSulphide	less than	ppmmol	-	-(¹)
	H ₂ S + COS + SO _x + DMS	sum less than	ppmmol	-	20
Volatile organic components	Amine	less than	ppmmol	10	1
	Formaldehyde	less than	ppmmol	20	-
	Acetaldehyde	less than	ppmmol	20	-(¹)
	Aldehydes	sum less than	ppmmol	-	10
	carbolylic acids & amides	sum less than	ppmmol	-	1
	phosphorus-containing compounds	sum less than	ppmmol	-	1
	NH ₃	less than	ppmmol	10	3
	Ethylene (C ₂ H ₄)	sum less than	ppmmol	-	-(¹)
	H-Cyanide (HCN)	less than	ppmmol	-	2
	Total volatile organic compounds (excl. MeOH, EtOH, aldehydes)	sum less than	ppmmol	10	10
	Methanol	less than	ppmmol	40	620
	Ethanol	less than	ppmmol	20	20
Heavies	glycols (TEG)	sum less than		-	Follow dew-point specification
	C ₂₊ (aliphatic hydrocarbons)	sum less than	ppmmol	-	1200
	Aromatic Hydrocarbons	sum less than	ppmmol	-	0.1
Metals	Hg	less than	ppbmol	30	-
	Cadmium + Thalium	sum less than	ppbmol	30	-
Dew-point	Dew point (any liquid phase)	sum less than	°C (@ 20 bar)	-	-10 ⁽²⁾
Solids	Full removal cut-off diameter	Less than	micron	1 ⁽³⁾	1 ⁽³⁾

Notes to the table

- (1) There are some specific limits when transporting via OCAP infrastructure that can be obtained from OCAP B.V. (www.ocap.nl)
- (2) Measured or predicted using CPA equation of state.
- (3) This is the entry solids / dust specification for the envisaged Aramis stores. In order to achieve this Aramis will request Aramis emitters to install dust removal facilities with a cut-off diameter of 10 micron as a minimum. Furthermore, Aramis is planning to locate filters with cut-off diameter of 1 micron at optimal locations at the envisaged compressor and terminal stations.
- (4) Specification more stringent than Porthos CO₂ specification v 3.1 at 5 ppm The limit is set based on testing similar to those described in section A.4 in ISO TR 27921 at seabed conditions.

A number of impurities are included in the overview without a specific limit to their content. Emitters agree to inform Aramis in case these components are expected in the CO₂ product at levels above 1 ppmol. Aramis will then conduct a risk assessment study to understand the maximum amount that can be tolerated.

If the aforementioned CO₂ stream, includes components that are not included in the Aramis CO₂ specification and that can adversely affect Aramis, its personnel or the Aramis Transport System (e.g. as a result of liquid formation, corrosion or toxicity (HSE)), then Aramis shall in relation to each such component in consultation with customer, but at Aramis' sole discretion establish an upper concentration limit. The aggregate of these components and related concentration limits, as established from time to time shall constitute the CO₂ specification.

The risk assessment for impurities in a CO₂ collection hub system and in particular the interaction of impurities from different sources is an ongoing field of research. A good summary of today's understanding is the 2020 issue of ISO TR 27921. Evolving insights may result in a re-visit of the risks associated with a particular impurity or combination of impurities. Aramis plans to actively manage these risks and hereby reserves the right to adjust the specification, if the existing level will adversely affect Aramis, people working on the project, or the envisaged Aramis Transport System.