LNG QUALITY SPECIFICATIONS

Imported LNG

This document defines the composition and physical characteristics of the LNG quality which can be imported to Hamina LNG Terminal. The LNG composition of the imported LNG must be between Light LNG and Design LNG.
Importing composition between Design LNG and Heavy LNG is possible only by separate agreements.

LNG temperature when importing into the terminal, measured by Hamina LNG Emerson MID certified system, must be -156 °C or lower. Warmer cargo temperatures are possible only by separate agreement.

Exported LNG

The LNG composition and physical characteristics of LNG batches which are exported from Hamina LNG Terminal will be in between the presented Light and Heavy LNG. The prevailing quality of the LNG in the tank will be reported to the User as specified in the Customer Portal.

Hamina LNG reserves the right to amend this document in agreement with all Terminal Users.

LNG Composition

Component	Unit	Type of LNG		
		Light LNG	Design LNG	Heavy LNG
Methane	%mol	98.60	89.57	85.86
Ethane	%mol	1.18	8.61	8.40
Propane	%mol	0.10	1.18	3.00
i-Butane	%mol	0.01	0.13	0.60
n-Butane	%mol	0.01	0.18	0.60
i-Pentane	%mol	–	0.01	0.23
n-Pentane	%mol	–	–	–
Nitrogen	%mol	0.10	0.32	1.30
Carbon dioxide	%mol	–	–	0.01

Physical properties of LNG

	Unit	Type of LNG		
		Light LNG	Design LNG	Heavy LNG
Molecular weight	kg/kg-mol	16.26	17.76	18.86
Higher heating value (HHV) (Note 1)	MJ/Nm³	40.33	43.41	45.10
Lower heating value (LHV) (Note 1)	MJ/Nm³	36.27	39.15	40.74
Bubble point (Note 2)	°C	−161.7	−161.5	−165.1
LNG density (Note 3)	kg/m³	428.2	457.5	482.0

Note 1. HHV and LHV are calculated at 0°C and 1,013 bar pressure.

Note 2. Bubble point is calculated at 1,013 bar pressure.
Note 3. Density is calculated at bubble point and 1,013 bar pressure.

Methane number

Methane number calculated from the LNG composition in accordane with Wärtsilä method:

Light LNG	Design LNG	Heavy LNG
94	75	68

Gas quality requirements when injected into the Finnish Transmission network

National specification according to SFS-EN 16726:

Value	Minimum	Maximum	Unit
Wobbe index	13,76	17,81	kWh/m^{3}n
Methane number, WMN method	65		-
O_2		0,02	mol-%
CO_2		2,5	mol-%
Total sulphurs		21	mg/m^{3}n