



JS INEOS INSIGHT: Gas carrier

Shipbuilder: **Sinopacific Offshore & Engineering**
 Vessel's name: **JS Ineos Insight**
 Hull No: **S1015**
 Owner/Operator: **SNC Multigas S1015 / Evergas Management A/S**
 Country: **France / Denmark**
 Designer: ... **Owner / GreenSeas Marine / SOE**
 Country: **Denmark / China**
 Model test establishment used: **HSVA (Hamburg Ship Model Basin)**
 Flag: **Denmark**
 IMO number: **9685425**
 Total number of sister ships already completed (excluding ship presented): **2**
 Total number of sister ships still on order: **5**

INEOS' new vessels are a brand new class of ship and have been designated Dragon Class. Working with its partner Evergas, INEOS tried to find a solution shipping ethane from the US to Europe. Ethane, however, had only ever been shipped in small quantities on short routes. No one has ever attempted to ship it across the Atlantic. Ethane must be cooled to -90°C (130°F) which was the main design challenge.

An additional challenge and a world first was to connect the fuel and cargo systems, so that the engines could run off the same gas. This requires complex redesigns of the pipework, as the ethane must be vaporised for use in the engines.

Each ship features three bi-lobe optimised tanks, capable of carrying 27,500m³ of ethane. The Dragon Class ships are capable of transporting ethane and a range of additional products including ethylene, LPG, LNG and so on. Having a ship of this size capable of handling ethane and LNG is unique. Such flexibility requires the tanks to be designed to transport cargoes at temperatures of -162°C (-260°F). It took approximately five years from developing the ideas and concept to building the ships that are shipping ethane across the Atlantic today.

TECHNICAL PARTICULARS

Length oa: 180.3m
 Length bp: 170.8m
 Breadth moulded: 26.6m
 Depth moulded
 To main deck: 17.8m
 To upper deck: 14.8m
 Width of double skin
 bottom: 1.45m
 Draught
 Scantling: 9.4m
 Design: 8.3m
 Gross: 22,887gt
 Displacement: 32,087.9tonnes
 Lightweight: 11,170tonnes
 Deadweight
 Design: 16,400dwt
 Scantling: 20,400dwt
 Block co-efficient
 (please state relevant draught): 0.75 (8.3m)
 Speed, service (– %MCR output): 16knots
 (60% MCR with both engine
 in operation; 95% MCR with one
 engine in operation)

Cargo capacity (m³)
 Liquid volume: 27,500m³
 Bunkers (m³)
 Heavy oil: 1,236m³
 Diesel oil: 400.8m³
 LNG/Ethane – 1,960.4m³
 Total – 3,597.2
 Water ballast (m³): 8,505m³
 Daily fuel consumption (tonnes/day)
 Main engine only: 31.8tonnes/day
 Auxiliaries: 2.8tonnes/day
 Classification society
 and notations: Dragon class - BV I, +HULL,
 +MACH, Liquefied
 Gas Carrier, Type 2G - Dualfuel,
 Unrestricted Navigation, CPS (WBT),
 +VeriSTAR - HULL DFL 25 Years,
 +AUT-UMS, +SYS-NEQ, MON-SHAFT,
 CLEAN PASSPORT, GREENSHIP,
 INWATERSURVEY

% high-tensile steel used
 in construction: >1%
 Heel control equipment: Bilge Keel
 Roll-stabilisation equipment: Not fitted
 Main engine(s) x 2
 Model: 6L50 Dual Fuel
 Manufacturer: Wärtsilä
 Type of fuel: LNG / HFO/MDO
 Output of each engine: 5,850kW
 Gearbox(es)
 Make: Wärtsilä
 Model: TCH 350 – 2P58
 Number: 1
 Output speed: Propeller -87.5; PTO - 1800
 Propeller(s)
 Material: NIAL Bronze
 Designer/Manufacturer: Wärtsilä
 CME Zhenjiang
 Number: 1
 Fixed/Controllable pitch: ... Controllable Pitch
 Diameter: 6.4m
 Speed: 87
 Main-engine driven alternators
 Number: 2
 Make/type: AvK/ DSG86 M1/4
 Output/speed of each set: 1,800kW
 Diesel-driven alternators x 2
 Engine make/type: 6L20
 Type of fuel: LNG/HFO/MDO
 Output/speed of each set: 1,056kW
 / 1,200rpm
 Alternator make/type: Cummins generator
 tech / DSG86 K1-6
 Output/speed of each set: 1,200kVA
 /1,200rpm

Boilers x 1
 Type: OS-TCi
 Make: Aalborg
 Output, each boiler: 2,000kg/h; 7 bar
 Cargo cranes/cargo gear x 1
 Make: Shanghai Hengyuan
 Marine Eqp. Co. Ltd.
 Type: 6T-25M
 Performance: Electric Hydraulic
 Other cranes: 2
 Make: Shanghai Hengyuan Marine
 Eqp. Co. Ltd.
 Type: 2T-14M

Tasks: Aft Provision Crane
 Performance: Electric Hydraulic
 Mooring equipment
 Number: 2 aft, 2 Midship, 2 Anchor
 / winches forward
 Make: TTS
 Type (electric/hydraulic/steam): Hydraulic
 Special lifesaving equipment
 Number of each and capacity: 2 (1 free-fall
 lifeboat; 1 rescue boat)
 Make: Jiangsu Jiaoyan Marine
 Eqp Co. Ltd.
 Type: Freefall - JYM – FF – 6.65
 / Rescue Boat – GJ4.5

Cargo tanks x 3
 Grades of cargo carried: 2 Grades
 Product range: LNG / Ethane
 Stainless steel – structure/piping: ... Stainless
 Steel S316L

Cargo pumps x 6
 Type: DW200/200-3-K-I
 Make: Wärtsilä
 Stainless steel: Yes
 Capacity (each): 350m³/h
 Cargo control system
 Make: Kongsberg
 Type: K-Chief 700
 Ballast control system
 Make: Kongsberg
 Type: K- chief 700
 Water ballast Treatment System
 Make: Panasia
 Capacity: 700m³/hr
 Complement
 Officers: 12
 Crew: 10
 Supernumeraries/Spare: 4
 Single/double/other rooms: 26
 Passengers

Number of cabins: 1 Guest
 Stern appendages/special rudders: Rudder
 with Bulb

Bridge control system
 Make: Shanghai Marine Equipment Co. Ltd.
 Type: DF-1 – W/H
 Is bridge fitted for one-man operation? Yes
 Fire detection system
 Make: Consilium
 Type: Fire Detection System Salwico CCP
 Fire extinguishing systems
 Deck Area:
 Make/Type: TYCO Dry Chemical /
 Yard water spray
 Engine room: Fixed fire extinguishing
 Make/Type: NK CO₂ / Unitor Water Mist
 Radars x 2
 Make: JRC
 Model(s): JMR – 9225 – 6X /
 JMR – 9230 - S

Waste disposal plant
 Incinerator
 Make: CSSC Nanjing Luzhou
 Machine Co. Ltd.
 Model: OG200C
 Sewage plant
 Make: JOWA AB
 Model: JOWA STP 2010
 Contract date: 11 January 2013
 Launch/float-out date: 10 October 2014
 Delivery date: July 2015

