Application for a special authorization for the transport of UN 1972 and a proposal for the entry in Table C oil

Transmitted by the Government of the Netherlands
Application form for special authorizations
under section 1.5.2 ADN

For applications for special authorizations, please answer the following questions and points.*
Data are used for administrative purposes only and are treated confidentially.

Applicant
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(Company)
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(Address)

Summary of the application
Authorization for transport in tank vessels of UN 1972 as a substance of Class 2.

Annexes……………………………………………………………………………………………………………………………
(with brief description)

Application made:
At: Rotterdam
Date: 20/07/2011
Signature:
..................................................................................................
(of the person responsible for the data):

1. General data on the dangerous substance:
1.1 Is it:
   X a pure substance
   o a mixture
   o a solution

1.2 Technical name (if possible ADN nomenclature or possibly the IBC Code):
METHANE, REFRIGERATED LIQUID or NATURAL GAS, REFRIGERATED LIQUID with high methane content

1.3 Synonym:
LNG

1.4 Trade name:
LNG

1.5 Structure formula and, for mixtures, composition and/or concentration:
CH₄

1.6 Hazard class and, where applicable classification code, packing group:
2
1.7 UN No. or substance identification number (if known):
UN 1972

* For questions not relevant to the subject of the application, write “not applicable”.

2. Physico-chemical properties
2.1 State during transport (e.g. gas, liquid, molten, ...): liquid

2.2 Relative density of liquid at 20 º C or at the transport temperature if the substance is to be heated or refrigerated during transport: Not applicable

2.3 Transport temperature (for substances heated or refrigerated during transport): -162º C

2.4 Melting point or range: -182 º C.

2.5 Boiling point or range: -162 º C.
2.6 Vapour pressure at 15 º C ........, 20 º C ........, 30 º C ........, 37.8 º C ........, 50 º C ........, (not relevant)
   (for liquefied gases, vapour pressure at 70 º C ........), (for permanent gases, filling pressure at 15 º C ........).

2.7 Cubic expansion coefficient ..... K-1

2.8 Solubility in water at 20 º C: -
   Saturation concentration ...... mg/l
   or
   Miscibility with water at 15 º C:
   ○ complete ○ partial ○ none
   (If possible, in the case of solutions and mixtures, indicate concentration)

2.9 Colour: colourless

2.10 Odour: odorless

2.11 Viscosity ..... mm2/s.

2.12 Flow time (ISO 2431-1996) ........s.

2.13 Solvent separation test:

2.14 pH of the substance or aqueous solution (indicate concentration):

2.15 Other information:

3. Technical safety properties
3.1 Auto-ignition temperature in accordance with IEC 60079-4 (corresponds to DIN 51 794)
   620 º C;
   where applicable, indicate the temperature class in accordance with EN 50 014: 1994.

3.2 Flash-point: -188 º C
For flash-points up to 175 °C
Closed-cup test methods - non-equilibrium procedure
   PENSKY-MARTENS method: EN ISO 2719:2004
   LUCHAIRE apparatus: French standard AFNOR T 60-103:1968

   TAG method: ASTM D 56-02
Closed-cup test methods - equilibrium procedure

For flash-points above 175 °C
In addition to the above-mentioned methods, the following open-cup test method may be applied:
   CLEVELAND method: EN ISO 2592:2002; ASTM D 92-02b

3.3 Explosion limits: O.E.G: 5,8%  B.E.G: 15,9%
Determination of upper and lower explosion limits in accordance with EN 1839:2004.

3.4 Maximum safe gap in accordance with IEC 60079-1:2003

3.5 Is the substance stabilized during transport? If so, provide data on the stabilizer: No.

3.6 Decomposition products in the event of combustion on contact with air or under the influence of an external fire: None.

3.7 Is the substance fire intensifying? Yes.

3.8 Abrasion (corrosion) - mm/year.

3.9 Does the substance react with water or moist air by releasing flammable or toxic gases? No.
Gases released: -

3.10 Does the substance react dangerously in any other way? No.

3.11 Does the substance react dangerously when reheated?
   ○ Yes
   X No.

4. Physiological hazards

4.1 LD$_{50}$ and/or LC$_{50}$ value. Necrosis value (where applicable, other toxicity criteria in accordance with 2.2.61.1 of ADN): Not applicable
CMR properties according to Categories 1A and 1B of chapters 3.5, 3.6 and 3.7 of GHS.
4.2 Does decomposition or reaction produce substances posing physiological hazards? (Indicate which substances where known)
No.

4.3 Environmental properties (see 2.4.2.1 of ADN) Not applicable.

**Acute toxicity:**
- LC$_{50}$ 96 hr for fish ..........mg/l
- EC$_{50}$ 48 hr for crustacea .....mg/l
- ErC$_{50}$ 72 hr for algae ........mg/l

**Chronic toxicity:**
- NOEC ..................................mg/l
- BCF ..................................mg/l or log Kow .......
Easily biodegradable ........ yes/no

5. Data on hazard potential
5.1 What specific damage is to be expected if the hazard characteristics produce their effect?
- X Combustion
- X Injury
  - O Corrosion
  - O Intoxication in the event of dermal absorption
  - O Intoxication in the event of absorption by inhalation
- X Mechanical damage, brittle fracture
- O Destruction
- X Fire
  - O Abrasion (corrosion to metals)
  - O Environmental pollution

6. Data on the transport equipment
6.1 Are particular loading requirements envisaged/necessary (what are they)? Yes. A drip pan suitable for low temperatures.

7. Transport of dangerous substances in tanks
7.1 With which materials is the substance to be carried compatible? Stainless steel, 9% Ni-steel, aluminum.

8. Technical safety requirements
8.1 Taking into account the current state of science and technology, what safety measures are necessary in the light of the hazards posed by the substance or liable to arise in the course of the transport process as a whole? Boil-off control, cold transmission, maximum transporttemperature

8.2 Additional safety measures
- Use of stationary or mobile techniques to measure flammable gases and flammable liquid vapours:
- Use of stationary or mobile techniques (toximeters) to measure concentrations of toxic substances: none.
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<tbody>
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<td>UN-No. or substance identification No.</td>
<td>Name and description</td>
<td>Class</td>
<td>Classification code</td>
<td>Packing group</td>
<td>Dangers</td>
<td>Type of tank vessel</td>
<td>Cargo tank design</td>
<td>Cargo tank type</td>
<td>Cargo tank equipment</td>
<td>Opening pressure of the high velocity vent valve in kPa</td>
<td>Maximum degree of filling in %</td>
<td>Relative density at 20 ºC</td>
<td>Type of sampling device</td>
<td>Pump room below deck permitted</td>
<td>Temperature Class</td>
<td>Explosion group</td>
<td>Explosion protection required</td>
<td>Equipment required</td>
<td>Number of cones/blue lights</td>
<td>Additional requirements/Remarks</td>
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