

Economic Commission for Europe

Inland Transport Committee

30 October 2011

Working Party on the Transport of Dangerous Goods

**Joint Meeting of Experts on the Regulations annexed to the
European Agreement concerning the International Carriage
of Dangerous Goods by Inland Waterways (ADN)
(ADN Safety Committee)**

Twentieth session

Geneva, 23–27 January 2012

Item 7 of the provisional agenda

Special authorizations, derogations and equivalents

**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

A. Smit Roeters

(Name)

Chemgas Shipping BV.

(Company)

P.O. Box 23075 3001 KB Rotterdam (Netherlands)

(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:

 a pure substance a mixture 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 ° 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):
-162° C

2.4 Melting point or range: -182 ° C.

2.5 Boiling point or range: -162 ° C.

2.6 Vapour pressure at 15 ° C, 20 ° C, 30 ° C, 37.8 ° C, 50 ° C, (not relevant)

(for liquefied gases, vapour pressure at 70 ° C), (for permanent gases, filling pressure at 15 ° C).

2.7 Cubic expansion coefficient K-1

2.8 Solubility in water at 20 ° C: -
Saturation concentration mg/l
or

Miscibility with water at 15 ° 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 ° C;

where applicable, indicate the temperature class in accordance with EN 50 014: 1994.

3.2 Flash-point: -188 ° C

For flash-points up to 175 ° C

Closed-cup test methods - non-equilibrium procedure

ABEL method: EN ISO 13736:1997

ABEL-PENSKY method: DIN 51755-1:1974 and DIN 51755-2:1978 or AFNOR method: M07-019

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

Rapid equilibrium procedure: EN ISO 3679:2004; ASTM D 3278-96:2004

Closed-cup equilibrium procedure: EN ISO 1523:2002; ASTM D 3941-90:2001

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

No.

4. Physiological hazards

4.1 LD₅₀ and/or LC₅₀ 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:

LC₅₀ 96 hr for fishmg/l
EC₅₀ 48 hr for crustaceamg/l
ErC₅₀ 72 hr for algaemg/l

Chronic toxicity:

NOECmg/l
BCFmg/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?

- Combustion
- Injury
- Corrosion
- Intoxication in the event of dermal absorption
- Intoxication in the event of absorption by inhalation
- Mechanical damage, brittle fracture
- Destruction
- Fire
- Abrasion (corrosion to metals)
- 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.

- - - - -

Annex

| 1 | 2 | 3a | 3b | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|--|--|-------|---------------------|----------------|---------|---------------------|-------------------|-----------------|----------------------|---|-----------------------------------|---------------------------|-------------------------|--------------------------------|-------------------|--------------------|-----------------------------------|--------------------|-----------------------------|---------------------------------|
| UN-NO. or substance Identification No. | Name and description | Class | Classification code | Packing groupe | Dangers | Type of tank vessel | Cargo tank design | Cargo tank type | Cargo tank equipment | Opening pressure of the high Velocity vent valve in kPa | Maximum degree of filling in in % | Relative density at 20 °C | Type of sampling device | Pump room below deck permitted | Temperature Class | Explosion groupe | Ant-explosion protection required | Equipment required | Number of cones/blue lights | Additional requirements/Remarks |
| 1972 | METHANE, REFRIGERATED LIQUID or NATURAL GAS, REFRIGERATED LIQUID with high methane content | 2 | 3F | | 2.1 | G | 1 | 1 | 3 | | 95 | | 1 | No | T1 | II B ⁴⁾ | Yes | PP, EX, A | 1 | 37 |