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ECONOMIC COMMISSION FOR EUROPE

INLAND TRANSPORT COMMITTEE

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)

Fifteenth session
Geneva, 24-28 August 2009
Item 5 of the provisional agenda

CATALOGUE OF QUESTIONS

Gas - knowledge of physics and chemistry and emergency measures

Transmitted by the Central Commission for the Navigation of the Rhine (CCNR)¹

1. At its fourteenth session, the ADN Safety Committee, recalling that, under 8.2.2.7.2.3 of the Regulations annexed to ADN, the ADN Administrative Committee was required to prepare a catalogue of questions for the ADN examinations, decided that the item should be put on the agenda for future sessions, in order to enable lists of questions to be translated and adopted progressively (ECE/TRANS/WP.15/AC.2/30, paras. 38 and 40).

¹ Distributed in German by the Central Commission for the Navigation of the Rhine under the symbol CCNR/ZKR/ADN/WP.15/AC.2/2009/23.

2. This document contains the lists of questions proposed by CCNR in respect of:

Knowledge of physics and chemistry

- Examination objective 1.1: Law of ideal gases, Boyle - Gay-Lussac
- Examination objective 1.2: Law of ideal gases, fundamental laws

Steps to be taken in the event of an emergency - personal injury

- Examination objective 1.1: Personal injury - Liquefied gas on skin
- Examination objective 1.2: Personal injury - Breathing in gas
- Examination objective 1.3: Personal injury - Emergency assistance, general

Steps to be taken in the event of an emergency - dangerous incidents relating to the cargo

- Examination objective 2.1: Irregularities relating to the cargo - Leak in a connection
- Examination objective 2.2: Irregularities relating to the cargo - Fire in the engine room
- Examination objective 2.3: Irregularities relating to the cargo - Hazards in the vicinity of the vessel
- Examination objective 2.4: Irregularities relating to the cargo - Over-filling
- Examination objective 2.5: Irregularities relating to the cargo - Polymerization

GAS - KNOWLEDGE OF PHYSICS AND CHEMISTRY
Examination objective 1.1: Law of ideal gases, Boyle - Gay-Lussac

Number	Source	Correct answer
G 1101	Boyle-Mariotte law: $pV=\text{constant}$ A quantity of nitrogen subject to an absolute pressure of 100 kPa takes up a volume of 60 m^3 . At a constant temperature of 10° C , the nitrogen is compressed to 5 bars absolute pressure. What is the resulting volume? A 1 m^3 B 11 m^3 C 12 m^3 D 20 m^3	C
G 1102	Boyle-Mariotte law: $pV=\text{constant}$ Some propane vapour is in a cargo tank of 250 m^3 at ambient temperature and at 4 bars absolute pressure. Through a hole in the piping, enough propane escapes for the cargo tank to be at atmospheric pressure. What is the volume of the propane cloud if it does not mix with the air? A 250 m^3 B 500 m^3 C 750 m^3 D $1,000 \text{ m}^3$	C
G 1103	Boyle-Mariotte law: $pV=\text{constant}$ A given quantity of nitrogen has a volume of 50 m^3 at an overpressure of 0.6 bar. The nitrogen is compressed to a volume of 20 m^3 . The temperature remains constant. What is the resulting pressure of the nitrogen? A 1.5 bars absolute pressure B 3.0 bars absolute pressure C 4.0 bars absolute pressure D 5.0 bars absolute pressure	B

GAS - KNOWLEDGE OF PHYSICS AND CHEMISTRY
Examination objective 1.1: Law of ideal gases, Boyle - Gay-Lussac

Number	Source	Correct answer
G 1104	Boyle-Mariotte law: $pV=\text{constant}$ There is nitrogen in a cargo tank of 250 m^3 . The pressure gauge indicates a pressure of 1.2 bars. What amount of nitrogen is required to bring the pressure in the tank to 3 bars? A 450 m^3 B 700 m^3 C 950 m^3 D $1,200 \text{ m}^3$	A
G 1105	Boyle-Mariotte law: $pV=\text{constant}$ A quantity of nitrogen takes up a volume of 50 m^3 at 3.2 bars absolute pressure. At a constant temperature, the volume is reduced to 10 m^3 . What is the resulting pressure of the nitrogen? A 11 bars absolute pressure B 16 bars absolute pressure C 20 bars absolute pressure D 21 bars absolute pressure	B
G 1106	Gay-Lussac law: $p/T=\text{constant}$ In a closed tank there is propane vapour at 1.2 bars absolute pressure and at a temperature of $+10^\circ \text{ C}$. With the volume of the tank remaining constant, the temperature is increased until the pressure reaches 1.4 bars absolute pressure. What is the resulting temperature of the gas? A 12° C B 20° C C 57° C D 293° C	C

GAS - KNOWLEDGE OF PHYSICS AND CHEMISTRY
Examination objective 1.1: Law of ideal gases, Boyle - Gay-Lussac

Number	Source	Correct answer
G 1107	Gay-Lussac law: $p/T=\text{constant}$ A cargo tank contains propane gas at 5.0 bars absolute pressure and a temperature of 40° C. The propane gas cools to 10° C. What is the pressure in the cargo tank? A 1.0 bar absolute pressure B 1.2 bars absolute pressure C 3.6 bars absolute pressure D 4.5 bars absolute pressure	D
G 1108	Gay-Lussac law: $p/T=\text{constant}$ A cargo tank contains nitrogen at 1.5 bars absolute pressure and at -10° C. The temperature of the nitrogen increases to +30° C. What is the resulting pressure? A 1.8 bars absolute pressure B 2.9 bars absolute pressure C 4.5 bars absolute pressure D 7.5 bars absolute pressure	B
G 1109	Gay-Lussac law: $p/T=\text{constant}$ A drum of 10 m ³ filled with nitrogen is under 10 bars absolute pressure at a temperature of 100° C. With the drum volume remaining constant, the drum and its contents are cooled to -10° C. What is the resulting pressure? A 1 bar absolute pressure B 6 bars absolute pressure C 7 bars absolute pressure D 8 bars absolute pressure	C

GAS - KNOWLEDGE OF PHYSICS AND CHEMISTRY
Examination objective 1.1: Law of ideal gases, Boyle - Gay-Lussac

Number	Source	Correct answer
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G 1110 Gay-Lussac law: $p/T=\text{constant}$

B

In a cargo tank there is nitrogen at a temperature of 40° C. The pressure, 5 bars absolute pressure, has to be reduced to 4 bars absolute pressure. The nitrogen must be cooled to what temperature?

- A -22.6° C
- B -12.2° C
- C +33.3° C
- D +32° C

GAS - KNOWLEDGE OF PHYSICS AND CHEMISTRY
Examination objective 1.2: Law of ideal gases, fundamental laws

Number	Source	Correct answer
G 1201	<p data-bbox="387 412 1254 454">Fundamental law of gases: $pV/T=\text{constant}$</p> <p data-bbox="387 479 1254 555">The temperature of a volume of gas of 40 m^3 at 1 bar absolute pressure is increased from 20°C to 50°C.</p> <p data-bbox="387 584 1254 622">The pressure increases to 2 bars absolute pressure.</p> <p data-bbox="387 651 1254 689">What is the resulting volume?</p> <p data-bbox="387 719 1254 869">A 22 m^3 B 29 m^3 C 33 m^3 D 50 m^3</p>	A
G 1202	<p data-bbox="387 902 1254 945">Fundamental law of gases: $pV/T=\text{constant}$</p> <p data-bbox="387 969 1254 1046">A gas takes up a volume of 9 m^3 at 1 bar absolute pressure and a temperature of 10°C.</p> <p data-bbox="387 1075 1254 1151">The temperature is increased to 50°C and at the same time the volume is reduced to 1 m^3.</p> <p data-bbox="387 1180 1254 1218">What is the resulting pressure?</p> <p data-bbox="387 1247 1254 1395">A 9.3 bars absolute pressure B 10.3 bars absolute pressure C 11.3 bars absolute pressure D 20.5 bars absolute pressure</p>	B
G 1203	<p data-bbox="387 1429 1254 1471">Fundamental law of gases: $pV/T=\text{constant}$</p> <p data-bbox="387 1496 1254 1572">A gas takes up a volume of 40 m^3 at a temperature of 50°C and at 2 bars absolute pressure.</p> <p data-bbox="387 1601 1254 1677">With the temperature reduced to 10°C, the gas is at 1 bar absolute pressure. What is the resulting volume?</p> <p data-bbox="387 1706 1254 1845">A 12 m^3 B 16 m^3 C 52 m^3 D 70 m^3</p>	D

GAS - KNOWLEDGE OF PHYSICS AND CHEMISTRY
Examination objective 1.2: Law of ideal gases, fundamental laws

Number	Source	Correct answer
G 1204	Fundamental law of gases: $pV/T=\text{constant}$ A gas takes up a volume of 20 m^3 at a temperature of 50° C and at 2 bars absolute pressure. The temperature of the gas is reduced to 20° C and the volume is increased to 40 m^3 . What is the resulting pressure of the gas? A 0.4 bar absolute pressure B 0.6 bar absolute pressure C 0.9 bar absolute pressure D 1.4 bars absolute pressure	C
G 1205	Fundamental law of gases: $pV/T=\text{constant}$ A gas takes up a volume of 10 m^3 at 3.0° C and at 1.0 bar absolute pressure. To what temperature must the gas be brought so that at 1.1 bars absolute pressure it takes up a volume of 11 m^3 ? A 3.5° C B 3.6° C C 46° C D 61° C	D
G 1206	Fundamental law of gases: $pV/T=\text{constant}$ A gas takes up a volume of 20 m^3 at a temperature of 77° C and 1 bar absolute pressure. To what temperature should the gas be cooled so that it occupies a volume of 8 m^3 at 2 bars absolute pressure? A -63° C B 7° C C 46° C D 62° C	B

GAS - KNOWLEDGE OF PHYSICS AND CHEMISTRY
Examination objective 1.2: Law of ideal gases, fundamental laws

Number	Source	Correct answer
G 1207	<p data-bbox="387 412 1254 454">Fundamental law of gases: $pV/T=\text{constant}$</p> <p data-bbox="387 483 1254 555">At a temperature of 10°C and 1 bar absolute pressure, a gas occupies a volume of 70 m^3.</p> <p data-bbox="387 584 1254 656">What is the volume when the pressure is brought to 2 bars absolute pressure and the temperature to 50°C?</p> <p data-bbox="387 685 571 831">A 40 m^3 B 53 m^3 C 117 m^3 D 175 m^3</p>	A
G 1208	<p data-bbox="387 869 1254 911">Fundamental law of gases: $pV/T=\text{constant}$</p> <p data-bbox="387 940 1254 1012">At a temperature of 10°C and 1 bar absolute pressure, a gas takes up 5 m^3.</p> <p data-bbox="387 1041 1254 1113">What is the volume when the pressure is brought to 2 bars absolute pressure and the temperature is 170°C?</p> <p data-bbox="387 1142 571 1288">A 2.0 m^3 B 3.9 m^3 C 5.3 m^3 D 42.5 m^3</p>	B
G 1209	<p data-bbox="387 1326 1254 1368">Fundamental law of gases: $pV/T=\text{constant}$</p> <p data-bbox="387 1397 1254 1469">A gas takes up 8 m^3 at a temperature of 7°C and at 2 bars absolute pressure.</p> <p data-bbox="387 1498 1254 1570">What is the pressure when the volume is brought to 20 m^3 and the temperature to 77°C?</p> <p data-bbox="387 1599 828 1749">A 1.0 bar absolute pressure B 1.5 bars absolute pressure C 8.8 bars absolute pressure D 13.2 bars absolute pressure</p>	A

GAS - KNOWLEDGE OF PHYSICS AND CHEMISTRY
Examination objective 1.2: Law of ideal gases, fundamental laws

Number	Source	Correct answer
G 1210	Fundamental law of gases: $pV/T = \text{constant}$	C
<p>A gas takes up 8 m^3 at a temperature of 7°C and at 2 bars absolute pressure.</p>		
<p>What should the temperature be for the gas to take up a volume of 20 m^3 at 1 bar absolute pressure?</p>		
<p>A 9°C B 12°C C 77°C D 194°C</p>		

EMERGENCY MEASURES

Examination objective 1.1: Personal injury - Liquefied gas on skin

Number	Source	Correct answer
GM 1101	Liquefied gas on skin A crew member has had liquefied butane spilled on the hands. What first aid should be administered? A Briefly rinse the hands B Rinse the hands with water for at least 15 minutes C Treat the hands with an anti-burn ointment D Wrap the hands so that they are kept warm	B
GM 1102	Liquefied gas on skin A crew member has had liquefied butane spilled on the hands. You rinse the victim's hands with water for at least 15 minutes. If after the rinsing the hands do not recover their natural colour, what else do you have to do? A Call a doctor B Call the victim's family so that they can retrieve the victim C Put the victim to bed to keep the person warm D Treat the hands with an anti-burn ointment and wrap them	A
GM 1103	Liquefied gas on skin What do you do if a crew member has had liquefied butane spilled on his or her body? A Immediately remove the clothing and pad the body with water and sterile cotton B Immediately remove the clothing and shower the person C Put the person in a shower, then remove clothing in the shower D Have the person sit, clothed, in a warm bath for at least 15 minutes	C

EMERGENCY MEASURES**Examination objective 1.1: Personal injury - Liquefied gas on skin**

Number	Source	Correct answer
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GM 1104 Liquefied gas on skin D

A crew member has had liquefied ammonia spilled on the hands. What is the first thing for you to do?

- A Call a doctor
- B Have the person taken as quickly as possible to a burn centre
- C Apply an anti-burn cream copiously on the hands
- D Rinse the hands with water for at least 15 minutes

EMERGENCY MEASURES
Examination objective 1.2: Personal injury - Breathing in gas

Number	Source	Correct answer
GM 1201	Breathing in gas A member of the vessel's crew has breathed in a large quantity of propane but has not lost consciousness. What is the first thing for you to do? A. Have the person breathe freely B. Give the person oxygen C. Bring the person away from the danger zone and keep the person under surveillance D. Bring the person away from the danger zone and lie the person down in a stable position	C
GM 1202	Breathing in gas A member of the vessel's crew has breathed in propane and has lost consciousness but is still breathing. What is the first thing for you to do? A. Mouth-to-mouth resuscitation B. Give the person oxygen C. Bring the person away from the danger zone and keep the person under surveillance D. Bring the person away from the danger zone and lie the person down in a stable position	D
GM 1203	Breathing in gas A member of the vessel's crew has breathed in propane, has lost consciousness and is not breathing. What is the first thing for you to do? A. Bring the person away from the danger zone and apply mouth-to-mouth resuscitation B. Give the person oxygen C. Bring the person away from the danger zone and keep the person under surveillance D. Bring the person away from the danger zone and lie the person down in a stable position	A

EMERGENCY MEASURES**Examination objective 1.2: Personal injury - Breathing in gas**

Number	Source	Correct answer
GM 1204	Breathing in gas A member of the vessel's crew has breathed in ammonia. The person is coughing and has trouble breathing. What is the first thing for you to do? A. Give the person oxygen until there is no more coughing, then have the person lie down on a bed B. Bring the person away from the danger zone, keep the person under surveillance and call a doctor C. Shower the person and remove clothing D. Apply mouth-to-mouth resuscitation and inform a doctor	B
GM 1205	Breathing in gas A member of the vessel's crew has breathed in some propane gas. When do you apply mouth-to-mouth resuscitation? A. If the victim has lost consciousness and is breathing B. If the victim has lost consciousness and is not breathing C. If the victim has not lost consciousness and is breathing D. If the victim has not lost consciousness and is not breathing	B

EMERGENCY MEASURES

Examination objective 1.3: Personal injury - Emergency assistance, general

Number	Source	Correct answer
GM 1301	<p data-bbox="389 412 1257 448">Emergency assistance, general</p> <p data-bbox="389 481 1257 548">During an inspection, a member of the vessel's crew feels sick in a hold space. What is the first thing for you to do?</p> <ul data-bbox="389 582 1257 806" style="list-style-type: none"><li data-bbox="389 582 1257 616">A. Inform the master and provide first aid<li data-bbox="389 616 1257 683">B. Enter the hold space and find out what happened to the victim<li data-bbox="389 683 1257 750">C. Immediately remove the victim from the hold space with the help of a colleague<li data-bbox="389 750 1257 806">D. Activate the "do not approach" signal	A
GM 1302	<p data-bbox="389 840 1257 875">Emergency assistance, general</p> <p data-bbox="389 907 1257 974">A member of the vessel's crew trips on piping and has a serious fall. What is the first thing for you to do?</p> <ul data-bbox="389 1008 1257 1153" style="list-style-type: none"><li data-bbox="389 1008 1257 1041">A. Apply mouth-to-mouth resuscitation<li data-bbox="389 1041 1257 1075">B. Put the victim to bed<li data-bbox="389 1075 1257 1108">C. Check if the victim has lost consciousness<li data-bbox="389 1108 1257 1153">D. Inform a doctor	C
GM 1303	<p data-bbox="389 1187 1257 1223">Emergency assistance, general</p> <p data-bbox="389 1254 1257 1321">How do you check if a victim has lost consciousness as a result of an accident?</p> <ul data-bbox="389 1355 1257 1545" style="list-style-type: none"><li data-bbox="389 1355 1257 1388">A. Check if you can feel a pulse<li data-bbox="389 1388 1257 1456">B. Check if the thorax is moving and whether the victim is breathing<li data-bbox="389 1456 1257 1489">C. Check if the victim reacts to your words or other stimuli<li data-bbox="389 1489 1257 1545">D. Check if the victim reacts to the smell of ether	C
GM 1304	<p data-bbox="389 1579 1257 1615">Emergency assistance, general</p> <p data-bbox="389 1646 1257 1758">A member of the vessel's crew has breathed in a dangerous gas and has to be transported to hospital. What is the most important information to send with the victim?</p> <ul data-bbox="389 1792 1257 1930" style="list-style-type: none"><li data-bbox="389 1792 1257 1825">A. The victim's service record<li data-bbox="389 1825 1257 1859">B. The telephone number of the victim's family<li data-bbox="389 1859 1257 1892">C. The victim's passport<li data-bbox="389 1892 1257 1930">D. Information on the cargo	D

EMERGENCY MEASURES**Examination objective 2.1: Irregularities relating to the cargo - Leak in a connection**

Number	Source	Correct answer
GM 2101	<p data-bbox="272 412 560 443">Leak in a connection</p> <p data-bbox="272 479 1091 584">During unloading, liquid drips from a connection between the pipes for loading and unloading and the loading facility. What do you do?</p> <ul style="list-style-type: none"> <li data-bbox="272 622 1054 689">A. Stop the pumps and close the corresponding blocking valves <li data-bbox="272 696 1050 763">B. Place a receptacle under the connection to collect the leak <li data-bbox="272 770 536 801">C. Pump slowly <li data-bbox="272 808 1107 875">D. Place a wet towel around the connection and continue the unloading 	A
GM 2102	<p data-bbox="272 913 560 945">Leak in a connection</p> <p data-bbox="272 981 1114 1086">During loading, a connection between the pipes for loading and unloading and the loading facility develops a leak. What do you do?</p> <ul style="list-style-type: none"> <li data-bbox="272 1124 600 1155">A. Load more slowly <li data-bbox="272 1162 1126 1193">B. Stop the loading after consultation with the loading facility <li data-bbox="272 1200 580 1232">C. Continue to load <li data-bbox="272 1238 874 1270">D. Place a receptacle under the connection 	B
GM 2103	<p data-bbox="272 1305 560 1337">Leak in a connection</p> <p data-bbox="272 1373 1114 1478">During navigation with a loaded vessel, a place is found in the loading and unloading piping that is not leak-proof. All shut-off valves are closed. What do you do?</p> <ul style="list-style-type: none"> <li data-bbox="272 1516 1126 1583">A. Activate the “do not approach” signal, moor the vessel and alert the authorities <li data-bbox="272 1590 1070 1657">B. Activate the “do not approach” signal and continue the voyage <li data-bbox="272 1664 671 1695">C. Depressurize the piping <li data-bbox="272 1702 1018 1769">D. Continue the voyage without taking any additional measures 	C

EMERGENCY MEASURES

Examination objective 2.2: Irregularities relating to the cargo - Fire in the engine room

Number	Source	Correct answer
GM 2201	<p data-bbox="387 409 707 443">Fire in the engine room</p> <p data-bbox="387 477 1082 510">During loading, a fire breaks out in the engine room.</p> <p data-bbox="387 544 1058 577">What do you do, apart from extinguishing the fire?</p> <ul data-bbox="387 611 1201 801" style="list-style-type: none"><li data-bbox="387 611 1074 645">A. Continue to load, but inform the shore facility<li data-bbox="387 656 850 689">B. Just inform the shore facility<li data-bbox="387 701 1201 757">C. Activate the rapid blocking system and inform the shore facility<li data-bbox="387 768 786 801">D. Call the shipping police	C
GM 2202	<p data-bbox="387 835 707 869">Fire in the engine room</p> <p data-bbox="387 902 1217 969">You have a cargo of UN No. 1011 BUTANE. A fire breaks out in the machine room while the vessel is under way.</p> <p data-bbox="387 1003 1058 1037">What do you do, apart from extinguishing the fire?</p> <ul data-bbox="387 1070 1201 1261" style="list-style-type: none"><li data-bbox="387 1070 882 1104">A. Inform the competent authority<li data-bbox="387 1115 754 1149">B. Inform the consignee<li data-bbox="387 1160 1201 1216">C. Continue the voyage and activate the “do not approach” signal<li data-bbox="387 1227 898 1261">D. Activate the water-spray system	A
GM 2203	<p data-bbox="387 1294 707 1328">Fire in the engine room</p> <p data-bbox="387 1361 1225 1429">During unloading a fire breaks out in the engine room. What do you do, apart from extinguishing the fire?</p> <ul data-bbox="387 1462 1201 1644" style="list-style-type: none"><li data-bbox="387 1462 834 1496">A. Simply continue the voyage<li data-bbox="387 1507 850 1541">B. Just inform the shore facility<li data-bbox="387 1552 1201 1608">C. Activate the rapid blocking system and inform the shore facility<li data-bbox="387 1619 962 1644">D. Activate the “do not approach” signal	C

EMERGENCY MEASURES**Examination objective 2.3: Irregularities relating to the cargo - Hazards in the vicinity of the vessel**

Number	Source	Correct answer
GM 2301	<p data-bbox="272 450 751 488">Hazards in the vicinity of the vessel</p> <p data-bbox="272 517 1094 622">Your vessel is moored at a shore facility and is ready to be unloaded. A fire alarm is activated at the shore facility. On the dock and in the vicinity you see no fire. What do you do?</p> <p data-bbox="272 663 1062 808"> A. Disconnect the connections and depart with the vessel B. Await instructions from the shore facility C. Activate the water-spray system D. Activate the “do not approach” signal </p>	B
GM 2302	<p data-bbox="272 842 751 880">Hazards in the vicinity of the vessel</p> <p data-bbox="272 909 898 947">During unloading a fire breaks out on the dock.</p> <p data-bbox="272 976 512 1014">What do you do?</p> <p data-bbox="272 1043 1015 1223"> A. Activate the rapid blocking system, disconnect the connections and depart with the vessel B. Call the shipping police C. Activate the water-spray system D. Await instructions from the shore facility </p>	A
GM 2303	<p data-bbox="272 1256 751 1294">Hazards in the vicinity of the vessel</p> <p data-bbox="272 1323 1118 1406">While propane is being unloaded, there is a gas leak at the shore facility. The alarm is activated. What do you do?</p> <p data-bbox="272 1435 1023 1574"> A. Activate the water-spray system B. Await instructions from the shore facility C. Continue to unload, but wear a breathing apparatus D. Constantly measure the gas concentration on deck </p>	B

EMERGENCY MEASURES

Examination objective 2.4: Irregularities relating to the cargo - Over-filling

Number	Source	Correct answer
GM 2401	<p data-bbox="400 412 560 448">Over-filling</p> <p data-bbox="400 483 1241 589">During loading with propane, you regularly check the level gauges. There is a cargo tank that contains more than the amount permitted by the admissible maximum degree of filling.</p> <p data-bbox="400 624 624 660">What do you do?</p> <ul data-bbox="400 696 1219 952" style="list-style-type: none"><li data-bbox="400 696 1219 763">A. Have the loading stopped by the shore facility and pump the overflow into another cargo tank<li data-bbox="400 768 1219 835">B. Activate the rapid blocking system and pump the overflow into another cargo tank<li data-bbox="400 840 1219 875">C. Ensure that the admissible total quantity is not exceeded<li data-bbox="400 880 1219 947">D. During the rest of the loading, allow the overflow to flow into another cargo tank	A
GM 2402	<p data-bbox="400 983 560 1019">Over-filling</p> <p data-bbox="400 1055 1214 1160">During loading with butane, you regularly check the level gauges. A cargo tank contains more than the amount permitted by the admissible maximum degree of filling.</p> <p data-bbox="400 1196 624 1232">What do you do?</p> <ul data-bbox="400 1267 1214 1547" style="list-style-type: none"><li data-bbox="400 1267 1214 1335">A. Have the loading stopped by the shore facility and pump the overflow into another cargo tank<li data-bbox="400 1339 1214 1444">B. Separate this cargo tank and another of the cargo tanks, and using the compressor, you force liquid into the other cargo tank while continuing to load<li data-bbox="400 1449 1214 1485">C. Ensure that the admissible total quantity is not exceeded<li data-bbox="400 1489 1214 1556">D. Do nothing, as in specific circumstances you can take a little more cargo in one cargo tank	A

EMERGENCY MEASURES**Examination objective 2.4: Irregularities relating to the cargo - Over-filling**

Number	Source	Correct answer
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GM 2403 Over-filling

D

During loading with propane, the facility against overflowing is actuated. You are supposed to make a short voyage, in winter. How do you proceed?

- A. You disconnect the facility against overflowing and you continue to load
- B. You depart with the vessel, without undertaking any other action
- C. As you are able to carry more cargo, there is no problem
- D. You pump back some of the cargo until the admissible maximum degree of filling is reached

EMERGENCY MEASURES

Examination objective 2.5: Irregularities relating to the cargo - Polymerization

Number	Source	Correct answer
GM 2501	Polymerization During carriage of UN No. 1010 1,2-BUTADIENE, STABILIZED, the temperature rises in one of the cargo tanks. You assume the cargo has started polymerizing. What do you do? A. Activate the water-spray system to cool the cargo B. Fill the hold space with water to cool the cargo C. Inform the consignee of the cargo D. Release vapour from time to time	C
GM 2502	Polymerization During carriage of UN No. 1010 1,3-BUTADIENE, STABILIZED, the temperature rises in one of the cargo tanks. You assume the cargo has started polymerizing. What do you do? A. Add the accompanying inhibitor B. Inform the consignee of the cargo C. Moor the vessel and inform the competent authority D. Fill the hold space with water to cool the cargo	B
GM 2503	Polymerization During carriage of UN No. 1010 1,3-BUTADIENE, STABILIZED, the temperature rises in one of the cargo tanks. You assume the cargo has started polymerizing. What do you do? A. Release vapour from time to time to cool the cargo B. Activate the water-spray system to cool the cargo C. Pump the product out of the cargo tank in question and mix it with the contents of the other cargo tanks D. Inform the consignee of the cargo	D
