



**The Chartered
Institute of Logistics
and Transport**

**Sample
DGSA Examination Papers
March 2019 onwards**

Paper 1 Solutions

NOTE TO CANDIDATES

1. Answers to questions must be given in the space provided below each question.
2. In your answers use of the following are permitted:

ADR ADR Agreement 2019

CDGRR European Communities (Carriage of Dangerous Goods by Road and Use of Transportable Pressure Equipment) Regulations 2011 to 2019 (see link below):

https://www.hsa.ie/eng/Your_Industry/ADR_Carriage_of_Dangerous_Goods_by_Road/ADR_General_Information/Legislation/.

An administrative consolidation of the regulations up to 2017 is available (see link below):

[https://www.hsa.ie/eng/Your_Industry/ADR - Carriage of Dangerous Goods by Road/ADR General Information /Legislation/SI No 349 of 2011 CONSOLIDATED.pdf](https://www.hsa.ie/eng/Your_Industry/ADR_-_Carriage_of_Dangerous_Goods_by_Road/ADR_General_Information/Legislation/SI_No_349_of_2011_CONSOLIDATED.pdf).

Note: the consolidated version was prepared by the Health and Safety Authority for ease of reference only and is not a legal document.

3. All answers **must** be in ink.
4. If you need extra space, write 'continued' and finish your answer in the space provided at the end of this booklet. Make sure you mark any continuation with the question number.
5. Rough work, not intended to be read by the marker, should be scored out.
6. No part of this booklet is to be torn out. No writing is allowed on any other paper.
7. No unauthorised material may be brought into the examination room.
8. No talking or other means of communication between candidates is allowed during the examination. Any candidate found to be doing so will be subject to instant dismissal from the examination room. All queries should be directed to an invigilator.
9. All queries should be directed to an invigilator.

10. You may not leave the examination room during the first 30 minutes or last 15 minutes of the examination unless you are ill. In this case, let an invigilator know and s/he will make sure the correct procedure is followed.
11. You must hand your booklet to an invigilator before leaving.
12. Booklets must not be removed from the examination room under any circumstances.

Note: When you use a reference document to find your answer, you must include the following information – the document title and, as appropriate, the relevant paragraph numbers, sub-paragraph numbers, section, regulation, and schedule.

Marks may be lost if relevant detail is omitted.

Dangerous Goods Safety Adviser

Examination Paper 1

50 Marks

Pass Mark 65% (32 Marks)

1. Murnaghan & Co manufacture fuel additives. They decide to market a new liquid formulation which has the following properties:

Flashpoint 39°C

Boiling Point 73°C

Tests show that it will destroy intact skin tissue in a contact time of 2 hours 45 minutes during an observation period of 10 days.

- a. Classify the formulation explaining your decision. State its class and subsidiary risks.

Solution

The flashpoint and boiling point data would place the formulation in Class 3, packing group III. (1 Mark)

The corrosivity data would place the formulation in Class 8, packing group III. (1 Mark)

Using the rules of precedence and the table of precedence, the Class 3 danger takes precedence. Therefore the formulation will be placed in Class 3 packing group III with a corrosive subsidiary risk. (1 Mark)

(4 Marks)

Reference(s):	<i>2019 ADR: subparagraph 2.2.3.1.3, 2.2.8.1.6(c), 2.1.3.10 (1 Mark)</i>
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- b. The dangerous ingredients of the formulation are substances with the technical names Theta and Rho. Choose a suitable Proper Shipping Name and UN number for the formulation. Show how the Proper Shipping Name would be written on a transport document.

Solution

Flammable liquid, corrosive, n.o.s. (**1 Mark**) (contains Theta and Rho) (**1 Mark**)
UN 2924 (**1 Mark**)

(4 Marks)

Reference(s):	2019 ADR: subparagraph 2.2.3.1.3, 2.2.8.1.6(c), 2.1.3.10. The Dangerous Good List, Table A Column (1), (2) and (6), meaning of Special Provision 274 in 3.3.2, Chapter 3.3 and 3.1.2.8, Chapter 3.1 (1 Mark)
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2. A package bears the UN certification code



3B2/Y1.7/100/13/IND/ZZ75

a. Explain each of the following elements of the code.

Solution

- I.  *The United Nations packaging symbol (1 Mark)*
- II. 3B2 *3B2 Aluminium jerrican (1 Mark)*
- III. Y1.7 *Y1.7 Suitable for liquids of packing groups II and III up to a relative density of 1.7 (2 Marks)*
- IV. 100 *100 Tested hydraulically to a test pressure of 100 kPa (1 Bar) (1 Mark)*
- (5 Marks)**

Reference(s):	2019 ADR: subparagraphs 6.1.2 and 6.1.3 (1 Mark)
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b. What is the maximum permitted period of use for plastics drums intended for the transport of UN 2031 with more than 55% Nitric Acid?

Solution

2 Years (2 Marks)

(3 Marks)

Reference(s):	<i>2019 ADR: Dangerous Good List Table A Column (1), (2), (8), (9a). P001 Special Provision for Packing PP81. (1 Mark)</i>
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3. A flammable liquid adhesive is to be transported from Limerick to Killarney in 50 litre drums.
- a. According to the ADR regulations, who is responsible for using packaging approved for and suited to the carriage of the adhesive?

Solution

The consignor (1 Mark)

(2 Marks)

Reference(s):	<i>2019 ADR: Subparagraph 1.4.2.1.1(c) (1 Mark)</i>
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- b. According to ADR who when handing over for carriage packed dangerous goods shall check whether the packaging is damaged?

Solution

Loader (1 Marks)

(2 Marks)

Reference(s):	<i>2019 ADR: Subparagraph 1.4.3.1.1(b) (1 Mark)</i>
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- c. What danger marks and label(s) should appear on the drums? You may assume that the adhesive is not dangerous for the environment.

Solution

The drums should be marked with the UN number 'UN 1133' (1 Mark) and labelled with a number 3 flammable liquid label. (1 Mark)

(3 Marks)

Reference(s):	<i>2019 ADR: The Dangerous Goods List, Tables A and B, subparagraphs 5.2.1.1 and 5.2.2.1.1 (1 Mark)</i>
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4. Sodium hydroxide solution of Packing Group III is to be transported in consignments of 2000 litres from Dusseldorf, Germany, to Antwerp, Belgium. It is proposed to use plastic inner packagings of 25 litres.

- a. Can the substance be transported in Large Packagings in these inner packagings? Explain your answer as fully as you can.

Solution

Sodium hydroxide solution of packing group III is assigned UN 1824 packing group III, with packing instruction LP01. (1 Mark)

This allows up to 30 litre inner packaging's to be used. The Large Packaging must have a capacity of no more than 3m³. (1 Mark)

Hence the answer is yes. (1 Mark)

(4 Marks)

Reference(s):	<i>2019 ADR: The Dangerous List, Table A, columns (1), (2) and (8), Table B, Chapter 3.2. Packing instruction LP01, subparagraph 4.1.4.3, Chapter 4.1 (1 Mark)</i>
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- b. Is it permissible to transport two pallets of 200 litre drums of a substance of class 5.1 on the same vehicle as the large packaging of sodium hydroxide solution? Explain your answer as fully as you can.

Solution

Yes. According to the table for mixed loading this mixed loading is permitted. (1 Mark)

(3 Marks)

Reference(s):	<i>2019 ADR: The Table in 7.5.2.1, Chapter 7.5. (1 Mark)</i>
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5. What is the maximum interval between a periodic inspection for an ADR tank swap body intended for the transport of liquids?

Solution

5 years (1 Mark)

(2 Marks)

Reference(s):	<i>2019 ADR: paragraph 6.8.2.4.2 (1 Mark)</i>
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6. You discover that an undertaking has failed to provide its warehouse staff who load vehicles with copies of their dangerous goods training records. As the DGSA for the undertaking, what would you recommend to the undertaking?

Solution

You would ask the undertaking to issue a copy of the dangerous goods training record to each employee. (1 Mark)

(2 Marks)

Reference(s):	<i>2019 ADR: Paragraph 1.3.3 (1 Mark)</i>
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7. How many hazard groups are there in Class 2 according to ADR?

Solution

Nine (1 Mark)

(2 Marks)

Reference(s):	<i>2019 ADR: Paragraph 2.2.2.1.3 (1 Mark)</i>
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- b. What is the classification code for articles containing toxic substance, N.O.S.?

Solution

Classification Code for Article containing toxic substance, N.O.S. is T10.

(3 Marks)

Reference(s):	<i>2019 ADR: Dangerous Good list, Table A, Column (1), (2) and (3b) and Table B Chapter 3.2 (1 Mark)</i>
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8. A consignment of 70 x 200 litre drums of ethyl formate is to be transported in IBCs inside a large container from Rome, Italy, to Zurich, Switzerland.

State the danger placards which should be displayed on the container and where.

Solution

Ethyl formate is assigned UN 1190 and is a flammable liquid of Class 3 (1 Mark)

The container should be placarded on both sides and each end with a No. 3 flammable liquid placard. (1 Mark)

(3 Marks)

Reference(s):	<i>2019 ADR: The Dangerous Goods list, Table A, Columns (1), (2), (3a) and (5), Table B, Chapter 3.2. Paragraphs 5.3.1.2, Chapter 5.3 (1 Mark)</i>
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9. The ADR requires a notification of occurrences involving dangerous goods to be made to the competent authority using a model report. These reports must be made in certain circumstances.

i. A report of this kind must be made if a person requires a stay in hospital for at least how many days?

Solution

At least one day (1 Mark)

ii. A report of this kind must be made if there is a release of how much of a Transport Category 2 dangerous good?

Solution

333kg / 333 litres. (1 Mark)

iii. Name any two participants with safety obligations who may be required to ascertain that such reports are made?

Solution

Any from the loader, filler, carrier or consignee (1 Mark)

(4 Marks)

Reference(s):	<i>2019 ADR: Subparagraphs 1.8.5.1 and 1.8.5.3, first and second (b)s, Chapter 1.8. (1 Mark)</i>
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10. Receptacles used for the transport of gases of the ADR Class 2 and their fittings, that are not fully in compliance with Chapter 6.2 of the ADR and that were constructed before 1 July 2003 are allowed to continue to be used for carriage within the State. State any one practical step which needs to be taken with respect to their continued use.

Solution

a. all practicable steps are taken to ensure that the receptacle and its fittings are—

i. properly designed, of adequate strength, good construction and free from obvious defect,

or

ii. constructed of materials that are not chemically incompatible with or liable to react dangerously with the dangerous goods being carried,

or

iii. suitable for the purpose for which they are being used,

or

iv. designed, constructed and maintained so as to prevent any of the contents escaping except in the interests of safety, where the contents may be released using a suitable safety device, and

or

v. periodically inspected by an inspection body accredited type A or B or a competent person under the surveillance of an inspection body type A and otherwise in accordance with the relevant ADR subsections 6.2.1.6, 6.2.2.4, 6.2.3.5, 6.2.4.2 and at the intervals specified in the ADR and after any major repairs which may affect the integrity of the receptacle,] (3 Mark)

(4 Marks)

Reference(s):	<i>CDGR Regulation 55 (a) (i), (ii), (iii), (iv), (v) (1 Mark)</i>
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[END OF QUESTION PAPER]