



Common Characteristics Route

What is this unit about?

This specification is based on the training requirements drawn up by the Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations (as amended) which apply the provisions of ADR Agreement concerning the International Carriage of Dangerous Goods by Road Council Directive (as amended). This unit will make drivers aware of the specific hazards arising in the carriage of dangerous goods in Classes 2, 3, 4, 5, 6, 8 and 9 and the common characteristics associated with each class.

This course does not cover any aspect of the packages and/or bulk, tanks Specialisation course, the Specialisation course for carriage of substances and articles of Class 1 or Specialisation course for carriage of radioactive material of Class 7.

What should I know or be able to do before I start?

It is anticipated that those undertaking this unit will have some relevant knowledge gathered by either working in the freight logistics industry or through prior study.

What will I know or be able to do when I achieve this unit?

The learning objectives of each class are:

Common characteristics

The characteristics held in common by substances in Classes 2, 3, 4, 5, 6, 8 and 9.

Class 2

The preventative and safety measures appropriate to the various types of hazards in Class 2.

Class 3

The preventative and safety measures appropriate to the various types of hazards in Class 3.

Class 4

The preventative and safety measures appropriate to the various types of hazards in Class 4.

Class 5

The preventative and safety measures appropriate to the various types of hazards in Class 5.

Class 6

The preventative and safety measures appropriate to the various types of hazards in Class 6.

Class 8

The preventative and safety measures appropriate to the various types of hazards in Class 8.

Class 9

The preventative and safety measures appropriate to the various types of hazards in Class 9.

On successful completion of a Common Characteristics unit, you should have sufficient knowledge to enable you to take measures that may prove necessary for your own safety and for that of the public and environment for limiting the effects of an incident.

What does this involve?

Compulsory attendance on an approved training course will be required.

The Common Characteristics route will consist of a minimum of:

Common characteristics of the 7 classes

- ◆ 2 x 45 minute Teaching units for initial candidates
- ◆ 1 x 45 minute Teaching unit for refresher candidates

Group A Classes (Classes 2, 3, 6 and 8)

- ◆ 5 x 45 minute Teaching units for initial candidates
- ◆ 2.5 x 45 minute Teaching unit for refresher candidates

Group B Classes (Classes 4, 5, and 9)

- ◆ 2 x 45 minute Teaching units for initial candidates
- ◆ 1 x 45 minute Teaching unit for refresher candidates

How will this unit be delivered?

This unit will be delivered in accordance with the prescribed standards in a classroom environment with class participation, together with the use of illustrative examples and visual aids.

How will I show that I have achieved this unit?

By passing the appropriate examination which consists of multiple-choice questions. You must achieve a minimum pass mark of 70%.

Any failed examination must be retaken and successfully completed with any examination passes being held for a maximum of 12 months from original notification of result.

What can I do next?

Progression routes may include further study towards carriage of dangerous goods in packages and/or bulk, carriage of dangerous goods in tanks, Class 1 and 7, further industry sector specific on the job training and practical experience.

What will I have to do?

Undertake refresher training within the year before the date of expiry of any certificate issued if you wish to continue certification.

Further guidance

This unit is supported by the Department for Transport and HSENI Manual of Practice.



Administrative information

unit code: 013
unit title: Common Characteristics
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History of changes

Version	Description of change	Date
1.1	Revision of assessment criteria and reformatting of document.	
1.2	ADR unit review 2019.	November 2018
1.3	ADR unit review 2021	November 2020

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Guidance for instructors

All content detailed within the tables below must be taught.

Instructors should be particularly alert to those trainees who may specialise in one or two areas relative to the Classes being taught. For Class 6 where trainees may only move toxic waste products or for Class 9, asbestos products, the Instructor may use his or her judgement with regard to how much specific product detail is necessary. On no account must Instructors exclude the general requirements of the ADR syllabus detailed below.

Common characteristics

Learning objective	Areas to be covered
CC.1 The characteristics held in common by substances in UN Classes 2, 3, 4, 5, 6, 8 and 9	<p>CC.1.1 The classes, their dangers, and the precautions to be exercised when transporting them.</p> <p>CC.1.2 Need for containment, and the prevention of escape of product through correct packaging and careful handling.</p> <p>CC.1.3 Need for substances to be segregated from each other, and from other loads as appropriate.</p> <p>CC.1.4 Dangerous substances may have subsidiary hazards in addition to their primary hazard.</p> <p>CC.1.5 Effects of the escape of dangerous substances and the action to be taken in the event of a loss or potential loss.</p> <p>CC.1.6 Significance of the miscibility or immiscibility, specific gravity, flammability, volatility and asphyxiant properties of dangerous substances.</p> <p>CC.1.7 Need to avoid overheating substances or causing them to ignite and avoid sources of ignition.</p> <p>CC.1.8 Appropriate use of personal protective equipment (PPE).</p> <p>CC.1.9 Antidotes and the correct methods of decontamination.</p>

Class 2

Learning objective	Areas to be covered
2.1 Preventative and safety measures appropriate to the various types of hazards — Class 2.	<ul style="list-style-type: none">2.1.1 Characteristics of Class 2 and the three divisions. Levels of Danger according to their hazardous properties, as packing groups are not allocated.2.1.2 Marking and labelling.2.1.3 Why gases need to be compressed, liquefied, dissolved, chemicals/articles under pressure, refrigerated and adsorbed gases or a combination of these.2.1.4 Special packaging and containment systems.2.1.5 Dangers and the precautions to be exercised when transporting gases and actions to be taken in the event of an escape of gas.2.1.6 Hazardous properties including toxicity, flammability, corrosivity, oxidation and asphyxiation.2.1.7 The effects of low temperature on living tissue and other materials. (Cryogenic)2.1.8 Correct handling, storage and transportation of cylinders and avoidance of overheating.2.1.9 Segregation methods and responsibilities of all persons involved.2.1.10 BLEVE (Boiling Liquid Expanding Vapour Explosion).2.1.11 Flammability limits and liquid to vapour volume ratios.2.1.12 Appropriate personal protective equipment to include respiratory protective equipment.

Class 3

Learning objective	Areas to be covered
3.1 Preventative and safety measures appropriate to the various types of hazards — Class 3.	<ul style="list-style-type: none">3.1.1 Characteristics of Class 3 materials.3.1.2 Marking and labelling.3.1.3 Dangers and precautions to be exercised when transporting flammable liquids.3.1.4 Volatility.3.1.5 Vapours above the liquid burn rather than the liquid themselves.3.1.6 Vapours are usually colourless and heavier than air increasing the risk of asphyxiation and/or fire.3.1.7 Possible subsidiary hazards including toxicity and corrosivity.3.1.8 Segregation methods and responsibilities of all persons involved.3.1.9 Flashpoint, auto-ignition temperature, flammability limits and liquid to vapour volumes/ratios.3.1.10 Combination of vapour, air and ignition source can create fire hazards.3.1.11 Miscibility and immiscibility.3.1.12 Containment of material and actions on exposure to flammable liquids.3.1.13 Sources of ignition.3.1.14 Appropriate personal protective equipment to include respiratory protective equipment.

Class 4

Learning objective	Areas to be covered
4.1 Preventative and safety measures appropriate to the various types of hazards — Class 4.	<ul style="list-style-type: none">4.1.1 Characteristics of Class 4.1, 4.2 and 4.3.4.1.2 Marking and labelling.4.1.3 Dangers and precautions to be exercised when transporting Class 4 materials.4.1.4 Possible subsidiary hazards including toxicity, explosiveness and corrosivity.4.1.5 Drivers duties in relation to temperature control for certain Class 4.1 materials (SADT and SAPT requirements).4.1.6 Avoidance of overheating and sources of ignition.4.1.7 Segregation methods and responsibilities of all persons involved.4.1.8 Containment systems and actions to be taken on exposure.4.1.9 Appropriate personal protective equipment to include respiratory protective equipment.

Class 5

Learning objective	Areas to be covered
5.1 Preventative and safety measures appropriate to the various types of hazards — Class 5.	<ul style="list-style-type: none">5.1.1 Characteristics of Class 5.1 and Class 5.2.5.1.2 Marking and labelling.5.1.3 Dangers and precautions to be exercised when transporting Class 5 substances.5.1.4 Possible subsidiary hazards including, explosiveness, toxicity and corrosivity.5.1.5 Effects of oxidation on combustion even in the absence of air.5.1.6 Organic Peroxides contain combustible elements (carbon) and oxygen and the effects of these.5.1.7 Drivers duties in relation to temperature control for certain Class 5.2 materials (SADT requirements).5.1.8 Avoiding overheating and sources of ignition.5.1.9 Segregation methods and responsibilities of all persons involved.5.1.10 Containment systems and actions to be taken on exposure.5.1.11 Appropriate personal protective equipment to include respiratory protective equipment, and the specific dangers of Class 5.2 and in particular eye damage.

Class 6

Learning objective	Areas to be covered
<p>6.1 Preventative and safety measures appropriate to the various types of hazards — Class 6.</p>	<p>6.1.1 Characteristics of Classes 6.1 and 6.2. 6.1.2 Marking and labelling. 6.1.3 Dangers and precautions to be exercised when transporting Class 6 materials. 6.1.4 Possible subsidiary hazards including flammability, oxidising and corrosivity. 6.1.5 Entry into the body may be through inhalation, ingestion, absorption, injection and instillation. 6.1.6 The effects can be either acute or chronic, and the difference between these. 6.1.7 Category A and B substances for Class 6.2. 6.1.8 Clinical waste products derived from human or animal treatment and bio-research. 6.1.9 Segregation methods in particular from foodstuffs, and responsibilities of all persons involved. 6.1.10 Special Packaging requirements. 6.1.11 Containment of material and actions to be taken on exposure to Class 6 substances. 6.1.12 Appropriate personal protective equipment to include respiratory protective equipment. 6.1.13 Avoiding contamination when putting on and removing personal protective equipment. 6.1.14 Containment of used sharps. 6.1.15 The need for rapid decontamination and/or the use of an antidote in the event of exposure to certain Class 6 materials.</p>

Class 8

Learning objective	Areas to be covered
8.1 Preventative and safety measures appropriate to the various types of hazards — Class 8.	<ul style="list-style-type: none">8.1.1 Characteristics of Class 8 materials.8.1.2 Marking and labelling.8.1.3 Dangers and precautions to be exercised, when transporting Class 8 materials.8.1.4 Possible subsidiary hazards including toxicity, flammability, and oxidation.8.1.5 Strong chemical reaction with a wide range of materials.8.1.6 Chemical reactions of corrosive materials.8.1.7 The effects on many materials and human tissue may be immediate or delayed depending upon the concentration, duration and temperature.8.1.8 May react violently with heat, water and neutralising agents.8.1.9 Segregation methods and responsibilities of all persons involved.8.1.10 Containment systems and actions to be taken on exposure.8.1.11 Appropriate personal protective equipment to include respiratory protective equipment.

Class 9

Learning objective	Areas to be covered
9.1 Preventative and safety measures appropriate to the various types of hazards — Class 9.	<ul style="list-style-type: none">9.1.1 Characteristics of Class 9 substances and articles.9.1.2 Marking and labelling.9.1.3 Principle examples of substances and articles.9.1.4 Environmentally hazardous substances.9.1.5 Segregation methods and responsibilities of all persons involved.9.1.6 Containment systems and actions to be taken on exposure.9.1.7 Appropriate personal protective equipment to include respiratory protective equipment.9.1.8 Dangers and precautions to be exercised when transporting Class 9 substances and articles.9.1.9 Avoidance of overheating and sources of ignition.