Carriage of Dangerous Goods
By Road.
The Basics.

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Overview

• DG Regulations
• Classification
• Exemptions & Relaxations
• Consigning
• Packing & Marking
• Loading, Unloading & Stowage
• Tanks & Placards
• Carriers
• Security Plans
• Carriage in transport chain
• Accidents / incidents
• Training & DGSA
Dangerous Goods Regulations.

- UNECE - Transport of Dangerous Goods Model Regulations

- European Agreement Concerning the International Carriage of Dangerous goods By Road (ADR)

- The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (CDG Regs) As Amended
What are dangerous goods.

<table>
<thead>
<tr>
<th>Dangerous Goods Class</th>
<th>Dangerous Goods Label</th>
<th>Hazard Class Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1</td>
<td></td>
<td>Explosives</td>
<td>Airbags, Seatbelt Pretensioners, Articles pyrotechnic, fireworks (party poppers), ammunition, flares, fuses, explosive sounding devices</td>
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<tr>
<td>Class 2</td>
<td></td>
<td>Gasses</td>
<td>Oxygen, Compressed Refrigerated Nitrogen Liquid, Butane, Propane, Co2 Fire Extinguishers, Air conditioning refrigerant gas, Aerosols, calibration gases,</td>
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<tr>
<td>Class 3</td>
<td></td>
<td>Flammable Liquids</td>
<td>Petrol, Diesel, Solvents, Paints, Paint &amp; Paint Related Material, formaldehyde solution, sealers, Kerosene, Perfume, wood preservative,</td>
</tr>
<tr>
<td>Class 4</td>
<td></td>
<td>Class 4.1 Flammable Solids Class 4.2 Substances Liable to spontaneous combustion Class 4.3 Substances in contact with water emit flammable gasses</td>
<td>Wet cotton, Metal powders, Swars, rags contaminated with flammable liquids, Activated Carbon, Sodium</td>
</tr>
</tbody>
</table>
What are dangerous goods.

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<tr>
<td>Class 5</td>
<td></td>
<td>5.1 Oxidizing substances 5.2 Organic Peroxides</td>
<td>Calcium chlorate aqueous solution, Organic peroxide substances.</td>
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<tr>
<td>Class 6</td>
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<td>6.1 Toxic Substances 6.2 Infectious Substances</td>
<td>Arsenics, pesticides, Isocyanates, Phenols, Clinical waste, medical waste, infectious substances affecting humans or animals, biological substances</td>
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<tr>
<td>Class 7</td>
<td></td>
<td>Radioactive Material</td>
<td>Radioactive material fissile, uranium hexaflouride</td>
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<tr>
<td>Class 8</td>
<td></td>
<td>Corrosive</td>
<td>Acids &amp; Alkali’s, Batteries wet filled with acid / alkali.</td>
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<tr>
<td>Class 9</td>
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<td>Miscellaneous dangerous goods</td>
<td>Life saving devices, Lithium Batteries, Environmentally Hazardous Substances, Asbestos, electrical capacitors, elevated temperature substances, genetically modified organisms, PCB’s.</td>
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Highway to hazmat hell
## Classification

- Substances & Articles
- Single / Collective / Generic Entries
- Solution or mixtures

### 14. Transport Information

<table>
<thead>
<tr>
<th>Dangerous for Conveyance</th>
<th>Propane</th>
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<tbody>
<tr>
<td>UN Proper Shipping name:</td>
<td>1978</td>
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<tr>
<td>UN Number:</td>
<td>Flammable Gas</td>
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<tr>
<td>Symbol:</td>
<td>Special Containers</td>
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<td>Packing Group:</td>
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<tr>
<td>ADR/RID Proper Shipping Name:</td>
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<td>Class:</td>
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<tr>
<td>Classification Code:</td>
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<tr>
<td>Label:</td>
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<tr>
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<tr>
<td>IMO Hazard Class:</td>
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<td>Marine Pollutant:</td>
<td>23</td>
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<td>Hazard Identification Number:</td>
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<table>
<thead>
<tr>
<th>UN Proper Shipping Name</th>
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<tr>
<td>UN Hazard Class</td>
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<tr>
<td>UN Packing Group</td>
<td>PGII</td>
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### Dangerous Goods List - Table A

<table>
<thead>
<tr>
<th>UN No.</th>
<th>Name and description</th>
<th>Class</th>
<th>Classification code</th>
<th>Packing group</th>
<th>Labels</th>
<th>Special provisions</th>
<th>Limited and quantities</th>
<th>Packing instructions</th>
<th>Special packaging provisions</th>
<th>Mixed packing provisions</th>
<th>Portable tanks and instructions</th>
<th>Special provisions</th>
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<tr>
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<td>P001</td>
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Risk Based Implementation
Different Levels of Requirement

ADR Exemptions & UK Derogations

Excepted and Limited Quantity Loads

Small Quantity Loads

ADR Full Requirements Load
# Packaging, Transportation & Operational Requirements

## EQ & LQ

- Good quality combination Packaging
- Compatible with the substance
- Basic Labelling LQ / EQ label
- Prescribed max qty per inner and outer packaging

## Small Qty Loads

- Specific UN Approved Packaging (combination or single)
- Some prescribed max qty per inner and outer packaging's or single packaging.
- Specific Marking and Labelling

## Full ADR Load

- Specific UN Approved Packaging / Tanks
- Specific Marking and Labelling
- Prescribed max qty per inner and outer packaging or single packaging.

### Packaging

- Basic Trained Driver
- Transport document
- Carry Unlimited > 8t placarded vehicle
- 1 x 2kg powder fire extinguisher
- Handling and stowage requirements
- Any suitable vehicle can carry

### Transportation & Operational

- Basic Trained Driver
- Transport document
- Specified max small quantity per transport vehicle
- 1 x 2kg powder fire extinguisher
- Handling and stowage requirements
- Any suitable vehicle can carry
- Supervision where specified
- Any torch non sparking

- ADR Trained and Licensed Driver
- Placarded and marked vehicle
- Specified additional number of fire extinguishers & safety equipment
- Handling and Stowage / filling tank requirements & Supervision
- Approved vehicle construction type
- DG Documentation carried on vehicle + Instructions in writing
Consigning.

Consignors must ensure:

- Classify goods as “dangerous” or “not dangerous” “ADR Not applicable” Prohibited”
- Contain / package the dangerous goods
- Label & Mark packages (to identify the hazard & goods)
- Produce a dangerous goods transport document
- Ensure carrier is competent to carry DG
- Provide the carrier with information & documents
  - i.e. UN 3480, LITHIUM ION BATTERIES, Class 9, PG II, (E) 1 x Fibreboard box (4G)
Packing DG’s.

• Packaging conditions must be met
• LQ / EQ - Packaging
• UN Approved Packaging – Packaging Instructions
  – Criteria for testing
• Special Packing Provisions
• Mixed Packing Provisions
• Inspection & Testing
Marking & Labelling of Packages
Handling Loading, Unloading & Stowage.

- Check goods are permitted for carriage
- Protection of goods
- Segregation / mixed loading
- No Smoking
- Cleaning after unloading
Loading & Stowage
Carriage

The carrier must ensure that:

- Goods are permitted for carriage
- No visually obvious defects
- Overloading
- Specified equipment
- Documentation is on board
- Vehicle placarded and marked
- Adhere to tunnel restrictions
Tanks & Placards.

• Specified tanks for substances
• Tank operators must ensure:
  – Approved design, Compliance with construction, equipment, testing and inspection.
  – Maintenance of tank shells and equipment
  – Regular checks, if necessary, repairs or alterations
  – Procedures to ensure correct filling / operation
  – Placards and orange plates are correct & applied

• Carriage in Bulk?
Security Plans

- HCDG – potential for misuse in terrorist event.
- Explosives
- Radioactive’s
- Toxic and infectious substances
- Corrosives, flammable liquids, flammable gasses over 3000 kg or ltrs
- Security plans required for threshold loads
Carriage in transport chain

- Greater restrictions in IMDG & IATA
- Conformity to other modal regulations is accepted for carriage in transport chain
Accidents / Incidents

- ADR
  - Personal injury (intensive medical treatment)
  - 24h> in hospital
  - Inability to work for 3 days
  - Material or Environmental Damage – exceeds £50,000 euros.

- RIDDOR 2013
- Department for Transport & HSE
- HSE Publish Monthly Prohibitions
Training Requirements.

• All persons involved must be appropriately trained in:
  – general familiarisation
  – function specific
  – safety (if any exposure is likely to occur)
  – Security

• Refreshers

• Drivers of ADR Loads – ADR vocational training + Examination

• Air / Sea Training
Dangerous Goods Safety Advisor.

- Appoint a DGSA if activities are above small quantity loads
  - Help prevent risk
  - Facilitate conduct of activities and monitor compliance
  - Advise
  - Annual Report

- DGSA – Vocational Training + Exams
DG Resources

- UNECE Website (ADR Free to Download)
- HSE – CDG Manual
- ADR Pro App
- Linkedin – BADGP
- Croner DGSA Subscription
- CAA, IATA & MCA websites
- VCA website
- Royal Mail Website
Questions?
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