

NCEC is conducting a project on behalf of the UK Department for Transport, part of which aims to raise awareness and promote the reporting requirements for dangerous goods incidents that occur on the road network.

Welcome to our first quarterly newsletter to support this.

Road (ADR) Incident Reporting Requirements

Imagine that your warehouse manager lets you know that while loading a trailer for delivery to a customer, a forklift truck punctured a 950-litre intermediate bulk container (IBC) containing UN 1764, DICHLOROACETIC ACID, Class 8, PG II. This caused a 500-litre spill that spread across the floor of the warehouse. It is cleaned up appropriately by trained warehouse staff, so the incident is now closed with all actions taken. However, from your dangerous goods awareness training you believe there is some sort of notification process for reporting dangerous goods accidents. And you are right to think that!



It is a legal requirement under the Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) regulation to report certain serious types of incidents involving dangerous goods to the Competent Authority. In Great Britain this authority is the Department for Transport (DfT). In Northern Ireland, operators would be required to report to the Health and Safety Executive for Northern Ireland (HSENI). The incident must be reported within **one month** of the incident occurring. To ensure that your organisation is accurately fulfilling its legal responsibilities, you may implement an internal best practice incident reporting process so that key stakeholders are promptly alerted when an incident meets the criteria outlined in ADR 1.8.5.

A report is required when an incident involving dangerous goods fits into one of the following events **AND** it is serious enough to meet at least one criterion.

Event	Criteria
Immediate risk of, or confirmed loss of product	<ul style="list-style-type: none"> • Transport category 0 / 1: > 50 kg or litres • Transport category 2: > 333 kg or litres • Transport category 3 / 4: > 1,000 kg or litres <p><i>There are also additional stipulations for Class 6.2 and Class 7 materials.</i></p>

Personal injury or fatality	<ul style="list-style-type: none"> • Death • Unable to work for at least three consecutive days • Hospital stay of one day or more • Intensive medical treatment
Material or environmental damage is sustained	<ul style="list-style-type: none"> • Damage value more than €50,000
Involvement of the authorities	<ul style="list-style-type: none"> • Evacuation or route closure for three hours or more

This table provides a brief summary of criteria, however for full legal definitions please refer to ADR 1.8.5.

ADR 1.8.5 covers more than the movement of goods on public roads. It also encompasses **loading and unloading operations**. Therefore, there may be reporting obligations on the loader, filler, carrier, or consignee.

Some scenarios that would require reporting to the DfT (or other Competent Authority) are detailed below for you to consider. They are designed to demonstrate the breadth of dangerous goods incidents that must be reported.

- ❖ While loading a trailer for customer delivery, a forklift truck punctured a 950-litre IBC containing UN 1760 Corrosive Liquid, N.O.S., PG II, which is assigned to transport category 2. This resulted in a 500-litre spill that spread across the floor of the warehouse. Although it was cleaned up appropriately by trained warehouse staff, this would qualify for reporting to the Competent Authority, as the spill exceeded the 333-litre threshold for transport category 2.
- ❖ A shipment of UN 2067 ammonium nitrate fertilizer grade was on route to a farm, however the load was shed on a minor B-road. The spill occurred at night and the road was closed by the police for 12 hours, until first light, when the clean-up crew arrived and worked on the spill. This road closure would need to be reported to the Competent Authority as it was closed for more than three hours.
- ❖ A warehouse employee was supervising the loading of a mixed load pallet of dangerous goods into a curtain-sided truck but accidentally trapped his hand beneath the pallet. He sustained a crush injury to his hand and was unable to work for five days. As the employee was unable to work for over three days, the Competent Authority would need to be notified.
- ❖ During icy weather conditions, the driver of a lorry lost control and crashed through the railing of a low bridge. The damage to the vehicle caused an unknown amount of its load, UN 3077 Environmentally Hazardous Substance, Solid, to enter the river below. The chemical was toxic to fish and destroyed £70,000 of fish stock in a downstream fishery, despite prompt action by the relevant agencies. The Competent Authority would need to be informed as the estimated value of damage caused by this incident involving dangerous goods exceeded €50,000.
- ❖ A road tanker was being filled with fuming nitric acid for delivery to a customer but the filling hose was poorly fitted. The road tanker operative accidentally inhaled some of the vapour as it escaped and began to cough violently, and experienced pain when breathing. The operative was admitted to hospital for treatment and kept under

observation for 48 hours due to the serious risk of pulmonary oedema. Since the operative stayed in hospital for more than one day due to exposure to a dangerous good, this incident would qualify for reporting to the Competent Authority.

If you are the person responsible within your organisation for reporting dangerous goods incidents to the Competent Authority, you should familiarise yourself with the full criteria of ADR 1.8.5, which defines when you need to submit a report. It is a legal requirement for incidents and accidents meeting the requirements of ADR 1.8.5 to be reported to the Competent Authority who, on receipt of the report, are entitled to request further relevant information. The online reporting form for Great Britain can be found here:

[Transporting dangerous goods - GOV.UK \(www.gov.uk\)](http://www.gov.uk)

If an incident occurs during an international journey covered by ADR 1.8.5, a report must be submitted to the competent authority of the territory where the incident occurred.

If you have any questions on the reporting requirements of ADR 1.8.5 or other regulatory obligations, please contact the DfT at dangerousgoods@dft.gov.uk or call 020 7944 2271 / 2058.

Load Security – An Enforcement Perspective

Do we really have an issue with load security?



Enforcement experience on vehicles carrying dangerous goods indicates that there is plenty of work to be done by us all. Non-compliance with the regulations has led to some very serious incidents involving insecure loads during the carriage of dangerous goods. These incidents range from IBC's sliding along the load bed and being pierced by protruding items within the vehicle, to containers completely falling off the vehicle. Such incidents have not only led to the loss of the product but have endangered life. Injuries can be sustained from the physical impact of the container hitting drivers, loaders, and the public, or from exposure to the product. Incidents such as these can also lead to

significant clean-up operations with associated environmental damage. These can have catastrophic costs in terms of reputational implications for the operator. Moreover, there may be costs for the wider UK economy, such as those associated with road closures while specialist teams restore the infrastructure. Therefore, prolonged vehicle-related incidents, along with associated road closures, can have a massive cost impact on the wider UK economy.

While we are starting to see the positive effects of responsible hauliers, who have invested in load security (both in training and equipment) we must all continue to be vigilant. We can continue to improve and it is the responsibility of everyone involved in the carriage of dangerous goods to invest time, effort and money to achieve the goal of the safe carriage of dangerous goods.



How can enforcement agencies support operators to improve?

To support operator improvement, the Driver and Vehicle Standards Agency (DVSA) and the Health and Safety Executive (HSE) undertook a review of the existing load security enforcement policy. Part of that work entailed re-writing the load security guidance available on the GOV.UK website and updating the operator instructions. This led to a formal change to the Load Security Enforcement Policy, which came into effect on the 1 May 2022. The policy change removed the load security matrix and introduced more options in the Categorisation of Defects (CoD) to ensure officers choose the correct 'defect' for the issue noted and communicate this accurately to the company involved. The CoD also provides more notes to assist in choosing the right defect, again helping the operator to fully understand any remediation action required from them. The decision to remove the matrix was based on the principle that any load must be properly secured for transit and that any shed load has an impact on road safety, whether it is a pallet of bricks or cardboard packaging.

When assessing a load for the purpose of load security, the focus must be 'is it secure?'. If not, then the consequences for an operator could be severe, both in terms of the enforcement action they will face if their vehicle is stopped and, more critically, the potential impact if an incident does occur due to the load being insecure. If a vehicle is stopped by an enforcement officer and the answer to this question is 'no', then a prohibition must be issued, causing delays to the delivery of the load and business disruption for the operator, along with possible reputational damage from being unable to complete deliveries. However, if the answer to this question is 'yes', and there are no other serious regulatory infringements, the vehicle will be allowed to continue its journey, with perhaps some advice for future improvement if necessary. It is therefore in the interest of an operator to ensure that their load is fully compliant before it embarks on its journey.



To assess whether a load is compliant with the ADR regulations on load security, there are five key questions to ask, which can be used as a checklist for operators prior to signing off on a load:

- Can any part of the load slide, topple or bounce in any direction?
- Is the load causing the vehicle to be unstable or could it affect the handling?
- Can any part of the load fall off during transit?
- Is the load security equipment in poor condition and/or not appropriate for the load?
- Does any part of the load, or the way in which it is secured, present or is likely to present, an immediate danger to road users during transit?

If the answer is 'yes' to any one of these, the result can be:

- an immediate roadside prohibition;
- a prosecution;
- a referral to the Traffic Commissioners Office for Operator Licence consideration.

ADR 7.5.7 (Handling and stowage) sets out clear requirements for hauliers in terms of securing dangerous goods in a suitable manner to prevent movement and damage during transport.

Note: Our sincere thanks to Jason Dearsley, Essex Police/Vice Chair of the National Carriage of Dangerous Goods Practitioners Forum for providing the content of this blog.

ADR 2023 – Summary of Changes



ADR Amendments to Table A

The existing entry for UN 1169 “EXTRACTS, AROMATIC, LIQUID” will be deleted for ADR 2023. Shipments will need to be transferred to UN 1197. To account for this, UN 1197 will be given an updated proper shipping name, “EXTRACTS, LIQUID, for flavour or aroma”. This affects all five sub-entries of both UN 1169 and UN 1197.

There is a new entry UN 3550 “COBALT DIHYDROXIDE POWDER containing not less than 10% respirable particles”.

In addition, there are some minor changes, for instance altered special provisions, to the following UN numbers:

1002, 1010, 1012, 1038, 1051, 1060, 1081, 1082, 1085, 1086, 1087, 1092, 1093, 1143, 1167, 1185, 1218, 1246, 1247, 1251, 1301, 1302, 1303, 1304, 1345, 1545, 1589, 1614, 1724, 1829, 1860, 1872, 1891, 1917, 1919, 1921, 1961, 1966, 1972, 1991, 2015, 2055, 2200, 2218, 2227, 2251, 2277, 2283, 2348, 2352, 2396, 2426, 2452, 2521, 2522, 2527, 2531, 2607, 2618, 2838, 2908, 2909, 2910, 2911, 3022, 3073, 3079, 3138, 3208, 3209, 3269, 3302, 3312, 3509, 3531, 3532, 3533, 3534, 3536, 3538.

If your organisation transports any of the above, then the changes to the ADR entries should be reviewed.

Amendments to special provisions

Four new special provisions have been created:

- SP396, which affects gas cylinders;
- SP397, which affects oxygen and nitrogen: in summary where in approximate concentration alignment with air are not considered oxidiser Class 5.1;
- SP398, which affects butylenes: 1-butylene, cis-2-butylene & trans-2-butylene;

- SP676, which affects polymerizing substances.

In addition, the following special provisions have been amended: 119, 188, 225, 291, 327, 363, 389, 591, 593, 642, 644, 650, 654, 655, 663, 674.

Amendments to packing instructions

The following packing instructions have been amended:

P003, P004, P005, P006, P130, P137, P144, P200, P205, P208, P408, P621, P801, P903, P905, P906, P907, P909, P910, P911,

IBC02, IBC07, IBC520,

LP906.

Other amendments

Tank containers have been further divided such that those over 40,000 litres will now be placed in the new category of extra-large tank container.

The requirements for tanks to be equipped with safety valves have been reviewed and ADR chapter 6.8 now makes their fitment mandatory for tanks intended for the carriage of flammable liquefied gases and are optional for the carriage of compressed gases, non-flammable liquefied gases or dissolved gases. Tanks fitted with safety valves will need to display the new Safety Valve Mark, shown below. Tanks constructed prior to 2024 which are fitted with safety valves, are provided with an exemption from the requirement to display the new Safety Valve Mark until their next intermediate or periodic inspection.



Chapter 6 has been redesigned with a new chapter 6.9 and the old chapter 6.9 moved to 6.13.

CHAPTER 6.9 - Requirements for The Design, Construction, Inspection and Testing of Portable Tanks with Shells Made of Fibre Reinforced Plastics (FRP) Materials

CHAPTER 6.13 - Requirements for The Design, Construction, Equipment, Type Approval, Testing and Marking of Fibre-Reinforced Plastics (FRP) Fixed Tanks (Tank-Vehicles) and Demountable Tanks

In Section 9.7.9, there are now new rules for FL and EX/III vehicles which will require them to be fitted with automatic engine fire suppression systems and also for each wheel to be fitted

with a thermal protection device to avoid the propagation of fires from the wheels to the load. These requirements apply to vehicles entering into service from 1 January 2029.

Please note, this is not a comprehensive overview of all the changes. Remember that these changes took effect when ADR 2023 came into force on 1 Jan 2023, with compliance required by 1 July 2023 (or compliance with an extended transitional measure).

In addition to the above, a previous version of ADR made it a legal requirement for organisations that participate in the carriage of dangerous goods only as consignors to appoint a Dangerous Goods Safety Advisor (DGSA). However, as this was likely to create a significant burden on industry (to appoint the relevant people and implement the required regulations) a transitional measure was introduced to allow for this. This derogation ended on 31 December 2022, meaning that it is now necessary for office-based consignors that outsource the storage, packaging, and transportation of goods to a third-party logistics organisation to have a DGSA appointed. The DfT has released a video in support of this measure:



[Consignors Required to Appoint a DGSA by 31 December 2022 - YouTube](#)

Road Transport regulations (ADR/CDG) and Emergency Response

The National Chemical Emergency Centre's (NCEC) experience of advising on hazardous materials incidents over the last 50 years has given us an excellent view of how Dangerous Goods (DG) transport regulations support the emergency services and other people to safely resolve incidents.

DG regulations include administrative controls (such as hazard classification and consignment procedures) and practical measures (such as packaging and tank provisions) to maximise safety during transport. However, accidents do still occur but there is a clear sequence of how to use the regulations to respond to an incident.



Consider a scenario where a tanker is slowing down at a junction when another vehicle drives into the back of it, causing a leak of UN 2031, nitric acid 98%, from a damaged valve. Let us take a look at how everyone involved in this incident is supported by the clear regulatory structure in place, which facilitates its safe and efficient resolution.

Driver

The first level of response in this incident is the driver and the training they have received before being permitted to carry dangerous goods. The driver is not expected to have the chemistry or engineering expertise to resolve incidents but they play a key role in taking several early steps to help prevent the incident escalating and notifying the incident to the emergency services. ADR requires the driver to carry the Instructions in Writing (IiW) document, which provides an aide-memoir of key actions to take in the event of an incident.

Keeping the Dangerous Goods Note (DGN) to hand is also a key action that the driver can take to assist in the efficient resolution of the incident.

<p>Driver Training ADR Chapter 8.2</p> <p>Instructions in Writing ADR 5.4.3</p> <p>Linguistic versions of “Instructions in Writing” are available from UNECE website</p>
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First responders / Emergency services

Several parts of the transport regulations support the emergency services in determining the chemical hazards present at an incident. These include:



Vehicle markings and placarding

The type and positioning of vehicle markings vary depending on the exact type of vehicle and the load being carried but these will always be used by first responders in several ways.

The marking and placarding of the vehicle are predominantly used in the defensive stage of the emergency response, when the first responders are gathering information, ensuring the incident does not escalate, formulating a response plan, and preparing risk assessments.

Type	Use	Regulatory reference
Hazard warning diamonds	Identify primary and secondary hazards of the load	ADR 5.3.1
Orange plate: Front and rear	Provides a warning that dangerous goods are present BUT does not identify the product(s) being carried	ADR 5.3.2
Orange plate with UN number and Hazard Identification Number (HIN) (ADR international transport)	UN number identifies the chemical(s) being carried HIN indicates the hazard class of the materials and the severity of their hazards	ADR 5.3.2
Elevated Temperature Substance Mark and / or Environmentally Hazardous Substance Mark	Additional placards will be used to indicate other hazards, such as environmental risk and elevated temperature warnings	ADR 5.3.3 ADR 5.3.6
UK Domestic Journey Derogation Hazard Warning Panel (Orange plate) with UN number, Emergency Action	UN number identifies the chemical(s) being carried EAC provides guidance on personal protective equipment, suitable extinguishing media and containment priorities	Carriage of Dangerous Goods Regulations 2009

Code (EAC) and emergency advice telephone number (CDG UK domestic transport)	Emergency telephone number provides a source of specialist advice	
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Dangerous Goods Note (DGN)

The DGN provides the most comprehensive set of data on the shipment. It includes full details of the consignment, including the type and quantities of the dangerous goods being carried for packaged goods, packing group assignments for the evaluation of the severity of hazards and information on the consignor and consignee of the shipment.

This is extremely valuable information for more experienced responders, such as hazmat officers within the fire service, who are able to use the more detailed information to assess the hazard and associated level of risk posed and formulate a proportional response to the incident.

Specialist support and clean-up

There will be occasions where the emergency services require additional support from a product expert or emergency response specialist. The first stage of this is to determine who to contact. In our 50 years of providing an emergency response service, we have learnt that the



most efficient way of facilitating this is to include a 24/7 emergency number directly on the DGN. For shipments in tanks in the UK a dedicated 24/7 emergency number on the placard provides a best practice option.

Once specialist support has been contacted, they will utilise transport regulation data to provide support to the emergency services. Using UN numbers to identify products can avoid any ambiguity over products with similar sounding chemical names, whilst keeping

commercial formulation compositions confidential, to ensure an efficient and accurate response.

It is also likely that the product expert or emergency response specialist will use bespoke chemical information databases and other product information available through chemical supply regulations e.g. safety data sheets (SDS).

Once the incident enters the clean-up phase, all the chemical safety data will have been collated and can be passed to the remediation specialist. Ultimately, for many clean-ups the vehicle removing the dangerous goods will be driven by an ADR qualified driver, thereby completing the use of regulatory requirements in the incident response loop. To prevent future error and to help inform policy and shape safer practices, the DGSA should conduct an investigation and report incidents meeting the criteria outlined in ADR 1.8.5 to the Competent Authority as per the legal requirement to do so.

New Emergency Action Codes for 2023

The Dangerous Goods Emergency Action Code (EAC) List 2023 is now available. The new list has again been produced by the NCEC, in co-operation with the UK Home Office, and is published by The Stationary Office (TSO). A digital copy can be accessed [here](#) along with a summary of all the changes implemented, and a physical copy of the publication is available to [purchase from TSO](#).

For those wishing to start using ADR 2023 from 1st January 2023, the following changes to the EAC codes have been implemented:

UN	Substance	EAC
1872	LEAD DIOXIDE	1Z
1891	ETHYL BROMIDE	2WE
3550	COBALT DIHYDROXIDE POWDER, containing not less than 10% respirable particles	2Z

The **use of the Dangerous Goods EAC List 2023** in connection with the use of ADR 2023 Edition will be mandatory from 1st July 2023. The EAC List 2021 should no longer be used from that date.



* In the case of any contradiction between this article and the printed version of The Dangerous Goods Emergency Action Code List 2023, the latter will have precedence.

We hope you found this newsletter useful and informative. If you have any questions regarding the information in the newsletter, please contact us at ncec@ricardo.com.