Main changes made to the European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR) for the 2009 edition

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INTRODUCTION

This report identifies what are judged to be the main changes made to the European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR) for the 2009 edition and provides background to the changes.

The report addresses application in Ireland only

The likely effects on industry of the various changes are explored.

The changes to ADR are dealt with under the headings:

- General and for other than pressure receptacles and tanks
- Pressure receptacles - carriage of gases
- ADR tanks

In each section the changes are generally dealt with in ADR reference order recognising that some issues entail amendments in more than one place in ADR.

Some of the changes are as a result of harmonization with the United Nations (UN) Recommendations on the Transport of Dangerous Goods - Model Regulations - 15th Revised Edition and thereby also with the International Maritime Dangerous Goods (IMDG) Code and the International Civil Aviation Organization (ICAO) Technical Instructions. These ensure that the carriage rules keep in step facilitating multimodal carriage. Those changes that result from the globally harmonised system of classification and labelling benefit industry overall in that rules governing not only carriage but also supply, use and storage are further aligned reducing costs and improving health and safety.

Many of the changes, both via UN and directly, to amend ADR are as the result of proposals from the various sectors of industry.

They are made for a variety of reasons e.g. to provide for the carriage of new products on the market, changes within the industry and practices employed, and to ease the regulatory burden on industry while still maintaining a satisfactory safety framework. They are therefore of overall benefit to the industry even if the change entails some initial outlay to adapt to the new system.

For significant changes, transitional measures have been introduced and these are important and have been identified in the text. These can be open ended, such as the new requirement for surge plates or partitions for tanks of tank vehicles and tank-containers used for

liquefied gases and refrigerated liquefied gases, so that existing equipment can be used to the end of its natural life. It also means that the new costs are integral to the new equipment which is less expensive and disruptive than retrospective changes to existing equipment. Alternatively the transitional arrangements provide for a reasonable lead-in period, such as the new marking requirements on vehicles and containers for the carriage of limited quantities, so the costs are staggered or delayed. In addition, in cases such as new marking on tanks or pressure receptacles, this can be done to coincide with the date of the next inspection so that the equipment does not have to be taken out of service.

For some time now European Standards (EN) and International Standards (ISO) have been drafted by CEN and ISO, some are joint EN/ISO Standards and are referenced in ADR. These deal with the technical details of the regulatory requirements and show the means whereby the objectives of the rules can be achieved, or have to be achieved where the use of a Standard is mandatory.

These Standards are usually drafted by Sub-Committees or Working Groups of Technical Committees which are largely composed of representatives of industry. This means they tend to reflect current industry practice and are on the whole acceptable to industry.

A number of the 2009 changes to ADR are of significant benefit, so industry may wish to contact the relevant Competent Authority to gain permission/approval to start using these provisions in advance of their implementation into domestic law through the Inland Transport of Dangerous Goods Directives, due to come into effect by 1 July 2009.

The assistance of Dr. Chris Jubb in preparing the section dealing with pressure receptacles – carriage of gases, is gratefully acknowledged.

SUMMARY OF THE MAIN ADR 2009 CHANGES

GENERAL AND FOR OTHER THAN PRESSURE RECEPTACLES AND TANKS

Exemptions - Chapter 1.1

In the case of the exemption for the carriage of dangerous goods by private individuals provided for in 1.1.3.1(a), when the goods are flammable liquids carried in refillable receptacles filled by, or for, a private individual, the total quantity may not exceed 60 litres per receptacle and 240 litres per transport unit.

The exemption in 1.1.3.2(c) relating to gases of Groups A and O, has been modified to harmonize with the UN Recommendations. This is slightly more restrictive in relation to liquefied gases but the change was proposed by the gases industry as they felt that pressure in a closed receptacle could rise rapidly with a small increase in temperature.

In the first indent after the Table in 1.1.3.6.3 defining "maximum total quantity per wagon/vehicle or large container" for articles, a new exemption for dangerous goods in machinery and equipment has been added whereby the maximum total quantity is the total quantity of dangerous goods contained in the machinery or equipment in kilograms or litres rather than the gross mass as at present. A new note to 5.4.1.1.1(f) has been added to explain this in relation to the quantity to be declared on the transport document.

This means that more machinery and equipment can be carried on the vehicle before most ADR requirements apply, so is a benefit to industry.

It has been agreed that when dangerous goods are carried under the exemptions provided for in 1.1.3.6, a declaration is not required on the transport document and 5.4.1.1.10 has been therefore deleted.

This represents a relaxation from documentary requirements for international traffic. For domestic traffic a document is not required in these circumstances.

By a new exemption in sub-section 1.1.3.7, the provisions laid down in ADR will not apply to lithium batteries installed in a means of transport, performing a transport operation and destined for its propulsion or for the operation of any of its equipment nor to lithium batteries contained in equipment for the operation of this equipment used or intended for use during carriage (e.g. a laptop).

This is a relaxation as several uses of lithium batteries are now exempt from being considered as dangerous goods.

Definitions - Chapter 1.2

A number of definitions have been amended editorially including those for "small container", "packaging" and "large container". In the definition of "container", with the exception for the carriage of radioactive material of Class 7, containers have a capacity of not less than 1 m^3.

New definitions have been added for "ADN", "Animal material" and "Conformity assessment" with one for "Applicant" in relation to the latter. The definition of "GHS" has been amended to reflect the publication of the 2nd Revised Edition of the Globally Harmonized System of Classification and Labelling of Chemicals, the definition of "Manual of Tests and Criteria" to reflect Amendment 2 to the 4th Revised Edition of the Manual and the UN Model Regulations to reflect the 15th revised edition.

In addition the following Class 7 definitions, - "Approval", "Confinement system", "Containment system", "Criticality safety index (CSI)", "Design", "Exclusive use", "Maximum normal operating pressure", "Radiation level", "Radioactive contents" and "Transport index (TI)" have been transferred from 2.2.7.2 to 1.2.1 with some consequential modifications to existing definitions in 1.2.1. The following definitions have been adapted to take account of radioactive material, viz "Container", "Large container", "Package", "Packaging" and "Small container".

Training - Chapter 1.3

A new note has been added stating that training shall be effected before the responsibilities concerning the carriage of dangerous goods are taken on.

In the UN Model Regulations an additional sentence has been added stating that if a new employee has not received training then such duties may be undertaken under supervision. This is in line with current practice in Ireland and prior to this text coming in for the 2011 edition of ADR, a multilateral agreement may be considered for the interim.

Transitional measures – Section 1.6.5

The transitional measure in 1.6.5.4 relating to the construction of EX/II, EX/III, FL, OX and AT vehicles, has been amended such that the requirements of Part 9 in force up to 31 December 2008 may be applied until 31 March 2010.

This provides a similar transitional measure to that made for previous amendments to Part 9.

Radioactive materials – Class 7

Chapter 1.7 "General requirements concerning Class 7" has been revised to harmonize with the IAEA Regulations and the UN Model Regulations.

A new consolidated Section 2.2.7 has been created again harmonizing with the IAEA Regulations and the UN Model Regulations. Much of it is purely the reordering of the existing text
to make it more user friendly. Section 2.2.7 deals with all matters relating to the classification of radioactive materials in Class 7 including specific definitions for such materials, determination of activity level, basic radionuclides values, LSA material and its classification, SCO and its classification, special form radioactive material, low dispersible material, fissile material, classification of packages or unpacked material, excepted packages, Type A packages, uranium hexafluoride, Type B(U), B(M) and C packages and special arrangements. A number of definitions have been transferred from 2.2.7.2 to 2.2.7.5 to 1.2.1 (see above) and exclusions from ADR transferred to 1.7.1 from 2.2.7.1.2.

To assist in the assignment of the applicable UN numbers, the UN numbers have been listed in groups according to the activity level of the radionuclide contained in a package, the fissile or non-fissile properties of the radionuclide, the type of package, the nature and form of the contents of the package or special arrangements, viz :-

	UN Number
Excepted packages	2908, 2909, 2910, 2911
Low specific activity radioactive material	2912, 3321, 3322, 3324, 3325
Surface contaminated objects	2913, 3326
Type A packages	2915, 3327, 3332, 3333
Type B(U) packages	2916, 3328
Type B(M) packages	2917, 3329
Type C packages	3323, 3330
Special arrangement	2919, 3331
Uranium hexafluoride	2977, 2978

In addition: -

1. Special Provisions SP 336 and SP 337 have been added to Chapter 3.3 dealing respectively with the activity limits for non-combustible solid LSA-II and LSA-III material and for Type B(U) and Type B(M) packages, when carried by air. These two new Special Provisions have been added to the appropriate radioactive material entries in Table A of Chapter 3.2

2. changes to 4.1.9 for the packaging of radioactive materials have been made

3. new 4.1.9.1.6 to 4.1.9.1.11 have been added dealing with the requirements in relation to packages before the first and before every shipment of radioactive materials

4. a new sub-section 5.1.5.3 has been added to cover the determination of transport index (TI) and criticality safety index (CSI)

5. amendments have been made to Chapter 6.4 dealing with the construction, testing and approval of packages and material of Class 7.

All these changes for radioactive material are as a result of harmonization with UN and IAEA to further integrate Class 7 with the other classes of dangerous goods. There is no material change to the requirements but there may be minimal cost to the industry to familiarize itself with the repositioning of text.

DGSA examinations – Section 1.8.3

The last indent of 1.8.3.13 has been amended to include the new entry UN 3475 Ethanol and petrol mixtures, and aviation fuel classified under UN 1268 or UN 1863.

This widens the number of goods covered in the Class paper examination that may be taken by candidates in connection with undertakings that specialize in the carriage of Class 3 petroleum products.

An extra paragraph has also been included at the end to the effect that certificates issued before 1 January 2009 are also valid for UN 1268, UN 1863 and UN 3475.

This provides greater flexibility for those wishing to take this Class specific paper.

Tunnel restrictions – Section 1.9.5 etc

Section 1.9.5 of ADR deals with the restrictions on the transport of dangerous goods through tunnels. In 1.9.5.2.2, a number of amendments have been made to the lists of classification codes of some Classes of dangerous goods subject to the restrictions under Tunnel categories C and D. Consequential amendments have been made to Column (15) in Table A of Chapter 3.2.

In addition a new sentence has been added to 1.9.5.3.7 requiring Contracting Parties to ADR to notify the UN ECE Secretariat of the tunnel restrictions and for the Secretariat to make this information available on its website.

A new 5.4.1.1.1(k) requires the tunnel restriction code given in column (15) of Table A of Chapter 3.2 to be shown on the documentation. This however will not be necessary if the route is known beforehand not to pass through a tunnel with restrictions for the carriage of dangerous goods.

By an amendment to 8.2.2.3.2 (n), traffic restrictions in tunnels has been added to the list of subjects to be covered by the basic course.

The Table in 8.6.4 has been revised giving further explanation of the various tunnel codes of the whole load and the restrictions.

This represents some new costs to industry in adapting to the changes.

Security provisions - Chapter 1.10

Certain explosives of Division 1.4 (some detonators, cords and charges) and certain oxidizing substances (ammonium nitrate emulsions or suspensions or gels) of Class 5.1 have been added to the high consequence dangerous goods (HCDG) list. 1.1.3.6.2 and 1.10.4 have been amended to indicate that the security requirements of Chapter 1.10 apply to these Division 1.4 explosives irrespective of the quantity carried.

There is likely to be some cost to industry as these explosives and oxidizing substances are now subject to the requirements for security plans.

Wastes

With some exceptions simplified arrangements for the assignment of wastes to be carried have been added in 2.1.3.5.5. If a waste has a composition that is not precisely known its assignment to a UN number and packing group may be based on the consignor's knowledge of the waste, including all available technical and safety data as requested by safety and environmental legislation in force such as the list of hazardous wastes established by the European Commission. If there is any doubt the highest danger level shall be used. If however on the basis of knowledge of the composition of the waste and its physical and chemical properties, it is possible to demonstrate that the properties of the waste do not correspond to the properties of the packing group I level, the waste may be assigned by default to the most appropriate n.o.s. entry of packing group II.

This represents a relaxation as it simplifies the rules for the waste industry.

As a consequence, an additional declaration requirement for wastes has been added in 5.4.1.1.3 if the provision in 2.1.3.5.5 is applied.

Classification - Chapter 2.2

A number of amendments have been made to the classification requirements for dangerous goods in Chapter 2.2. These include: -

1. in the default fireworks classification table of 2.2.1.1.7.5, a new third entry has been added for "Shell, spherical or cylindrical"/"Preloaded mortar, shell in mortar" and Note 2 regarding "flash composition" has been expanded to provide for the time/pressure test.

2. the beginning of 2.2.3.1.5 has been amended to read "Non-toxic, non-corrosive and non-environmentally hazardous …" to clarify that viscous flammable liquids that are not environmentally hazardous are also excluded.

   The issue had been raised by industry so benefits them in that these products are not inadvertently caught.

3. in 2.2.43.2 and 2.2.43.3, references to UN 3132 and UN 3135 have been deleted as these n.o.s. entries are now acceptable for carriage.

   This provides a relaxation in that these categories of dangerous goods can now be carried.

4. new and amended organic peroxides entries of Class 5.2 have been included in the Table in 2.2.52.4.

   This follows a proposal from industry to reflect the new and modified formulations that it wishes to carry, so is of benefit to the industry.

5. 2.2.9.1.15 has been amended to make it clearer that not all Class 9 goods are assigned a packing group and as there are no criteria for Class 9, these are assigned "(as indicated in Table A of Chapter 3.2)" rather than "shall be assigned".

Environmentally hazardous substances

New classification criteria for environmentally hazardous substances (aquatic pollutants) have been included in a new Section 2.2.9.1.10. This harmonizes the criteria with those adopted for the UN Model Regulations, the GHS System and the IMDG Code. This covers definitions, data requirements on toxicity, classification categories and criteria, mixtures and bridging principles. As a consequence 2.3.5 has been deleted.

By amended 2.1.3.8, substances of Classes 1 to 9, other than those assigned to UN 3077 or 3082, meeting the criteria of 2.2.9.1.10 (for aquatic pollutants) are, additionally to their hazards of Classes 1 to 9, considered to be environmentally hazardous substances and are required to be so marked. This fact does not however need to be identified on documentation. Other substances meeting the criteria of 2.2.9.1.10 are to be assigned to UN 3077 or 3082 as appropriate.

A new Special Provision SP 335 has been added to Chapter 3.3 and against UN 3077 and UN 3082 in Table A in Chapter 3.2 for mixtures of non-dangerous solids with environmentally hazardous liquids or solids. These mixtures should be classified as UN 3077 except if there is free liquid present when the mixture is loaded or containment system is closed, when it should be classified as UN 3082. This Special Provision details the carriage requirements to provide, inter alia, for the carriage of cleaning pads. This Special Provision is based on SP 216 assigned to UN 3175 and similarly exempts packets or articles containing less than 10 g/10 ml of the environmentally hazardous substance.

Provision has now been made for the carriage of UN 3077 in bulk containers BK1 and BK2 and these codes have been added to this entry in column (10) of Table A in Chapter 3.2.

As a consequence, for carriage in bulk, VV3 has been replaced by VV1 in column (17) of Table A in Chapter 3.2 against UN 3077. It was agreed that the use of sheeted vehicles and containers without the need for adequate ventilation, was appropriate.

An amendment to special packing provision PP1 in Packing Instruction P001 which exempts packages containing certain substances from performance testing, has been extended to certain similar products which are environmentally hazardous substances assigned to UN 3082.

New sub-section 5.2.1.8 has been added to cover the new special marking provisions for environmentally hazardous substances. The new diamond-shaped marking depicts a dead fish and tree and is required on all packages containing environmentally hazardous substances except single packagings and combination packagings containing inner packagings with contents of 5 l/5 kg or less for liquids/solids respectively. Similarly new 5.3.6 requires containers, tanks and vehicles to bear the new environmentally hazardous substance mark. The requirements for the mark mirror the provisions for labels and placards respectively, in relation to size and location etc.

By new sub-paragraph 1.6.1.17, substances of Classes 1 to 9 other than those assigned to UN 3077 or UN 3082 to which the classification criteria of 2.2.9.1.10 have not been applied and which are not marked in accordance with 5.2.1.8 and 5.3.6 may still be carried until 31 December 2010 without the application of the provisions concerning the carriage of environmentally hazardous substances. This allows industry time to carry out the necessary testing against the new criteria.

However from new 2.2.9.1.10.5.2, substances, solutions and mixtures which are allocated the letter N "Environmentally hazardous" under EU supply and use Directives and are not otherwise regarded as dangerous goods shall be assigned to UN 3077 or UN 3082 of Class 9 as appropriate.

Industry has in the past generally felt that it is unnecessary to additionally identify dangerous goods in Classes 1 to 9 that are environmentally hazardous. However it is now accepted that the same new criteria and marking will also apply to the supply and use of their products anyway and for carriage by sea. Industry was also generally against declaring this on documentation which is not required and the transitional provisions allow time to adapt to the new requirements. Bearing in mind the parallel EU supply and use requirements the timescales for these transitional measures may well be reassessed in the future. So this will entail cost to industry, particularly the extra testing needed and marking of environmentally hazardous substances in other classes. This is mitigated to an extent by a longer lead in period and the fact that the rules are simplified as they are now applied across the board.

Dangerous Goods List - Chapter 3.2

Amendments to Table A include: -

1. Special Provision SP 274 (regarding n.o.s. entries) has been added to those substances (except UN 3048) wherever Special Provision SP 61 is mentioned in column (6)

2. deletion of PR1 to PR7 wherever they appear in column (8)

3. amendments to mixed packing requirements from MP15 to MP19 for substances of packing group III allocated the limited quantities provision LQ7. This ensures consistency between the quantity permitted per inner packaging for both limited quantity and mixed packing purposes, namely 5 litres.

   This resulted from an industry proposal and eases the mixed packing requirements for them.

4. amendments to a number of existing entries to harmonize with the UN Recommendations (for details see below under individual entries)

5. a number of entries have been added to harmonize with the UN Recommendations. (for details see below under individual entries)

The following new UN numbers have been added: -

UN 0505	SIGNALS, DISTRESS, ship (Division 1.4G)
UN 0506	SIGNALS, DISTRESS, ship (Division 1.4S)
UN 0507	SIGNALS, SMOKE
UN 0508	1-HYDROXYBENZOTRIAZOLE, ANHYDROUS, dry or wetted
UN 3132	WATER-REACTIVE SOLID, FLAMMABLE, N.O.S.
UN 3135	WATER-REACTIVE SOLID, SELF-HEATING. N.O.S.
UN 3373	BIOLOGICAL SUBSTANCE, CATEGORY B, (animal material only)
UN 3474	1-HYDROXYBENZOTRIAZOLE, ANHYDROUS, WETTED
UN 3475	ETHANOL AND GASOLINE/MOTOR SPIRIT/PETROL MIXTURE, with more than 10% ethanol
UN 3476	FUEL CELL CARTRIDGES, containing water-reactive substances
UN 3477	FUEL CELL CARTRIDGES, containing corrosive substances
UN 3478	FUEL CELL CARTRIDGES, containing liquefied flammable gas
UN 3479	FUEL CELL CARTRIDGES, containing hydrogen in metal hydride
UN 3480	LITHIUM ION BATTERIES
UN 3481	LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT

with all the necessary carriage requirements data for columns (3) to (20).

Consequential amendments have been made to the alphabetical list in Table B.

Signals in Divisions 1.4G and 1.4S

New UN entries 0505 to 0507 inclusive have been added to Table A of Chapter 3.2 with their carriage provisions, to deal with new assignments of signals distress and signals smoke to Divisions 1.4G and 1.4S.

This facilitates the carriage of these explosives and is therefore of a benefit to industry.

Chlorine UN 1017

Chlorine is now to be regarded also as oxidizing according to the criteria in ISO 10156-2:2005 referred to in 2.2.2.1.5. As a consequence, its Classification Code has been changed from "2TC" to "2TOC", a subsidiary 5.1 label is now required and the hazard identification number has been changed from "268" to "265".

This will entail a modest cost to industry for new labels, placards and orange-coloured plates and modification to the information required on transport documents.

Hydrogen fluoride UN 1052 and Hydrofluoric acid UN 1790

Tank special provision TM5 relating to the marking of the date of the most recent inspection of the internal condition of the shell, has been deleted against UN 1052 and UN 1790 with more than 85% hydrogen fluoride in Table A of Chapter 3.2.

This removes an unnecessary provision as it duplicated a requirement under the usual periodic inspection.

Lighters or lighter refills UN 1057

Special Provision SP 654 has been added to Chapter 3.3 and against UN 1057 detailing simplified carriage provisions for waste lighters.

This is a relaxation.

Chlorosilanes UN 1162, 1183, 1196, 1242, 1250, 1295, 1298, 1305, 1724, 1728, 1747, 1753, 1762, 1763, 1766, 1767, 1769, 1771, 1781, 1784, 1799, 1800, 1801, 1804, 1816, 1818 (silicon tetrachloride), 2434, 2435, 2437, 2985, 2986, 2987, 3361 and 3362

Following a proposal from industry, new Packing Instruction P010 (restricting the types of packaging that may be used) rather than P001, has been agreed for the chlorosilanes listed above and the current Packing Instructions IBC01 and IBC02 have been removed. The packing groups for UN 1250 and UN 1305 have been amended from PGI to PGII. At the same time the portable tank provisions assigned to chlorosilanes have been reviewed and amendments made to replace current portable tank instructions with instructions requiring more stringent provisions, e.g. the general use of bursting discs preceding relief valves and the use of portable tanks without bottom discharge connections.

Although this generally makes the transport provisions for chlorosilanes more stringent and costly, these changes have been brought about voluntarily by industry itself.

Ethanol UN 1170, Alcohols, n.o.s. UN 1987, and Flammable liquid, n.o.s. UN 1993

Following the adoption of UN 3475 for ethanol and gasoline/motor fuel/petrol mixtures with more than 10% ethanol (see below), Special Provision SP 330 (which covered the classification of these mixtures) has been deleted from UN 1170, UN 1987 and UN 1993 and from Chapter 3.3.

Nitroglycerin solution in alcohol UN 1204

Special Provision 601 has been added in column (6) to exempt this substance from ADR when in a pharmaceutical product ready for use.

This is a relaxation and of benefit to industry.

Bromoacetone UN 1569

Following a review of its properties, the portable tank instruction T3 has been replaced with T20 in column (10) with a consequential amendment to the related portable tank special provision. Hence considerably more stringent provisions apply to the carriage of this substance in portable tanks.

Bromine UN 1744

A new Packing Instruction P804 has been included in 4.1.4 and replaced P601 in column (8) against UN 1744 to provide for a specific packing instruction for bromine.

Medicines UN 1851, 3248 and 3249

Under Packing Instructions P001 and P002, Special Packing Provision PP6 which appears in these Packing Instructions and against these entries and restricts the maximum net quantity per package for these medicines to 5 l/5 kg, has been deleted.

This provides greater flexibility and offers a relaxation in the carriage of medicines on behalf of the pharmaceutical and health-care industries.

Nitric acid UN 2031

The packing group II entry has been divided whereby concentrations of at least 65% but not more than 70% nitric acid will now attract the subsidiary 5.1 oxidizing label. In addition, for concentrations of more than 55%, through new special packing provision B15 added to packing instruction IBC02 in 4.1.4.2, the permitted use of rigid plastics IBCs and composite IBCs with rigid plastics inner receptacles, is 2 years from manufacture.

This was proposed by the industry to be consistent with the 2 year requirement for plastics packaging. This will entail some extra cost because of the increased number of plastics packagings being used but in the proposal it was mentioned that the change was unlikely to have much impact as the substance was mainly carried in metal IBCs.

Nitrocellulose solution, flammable UN 2059

IBC packing instructions "IBC02" and "IBC03" respectively have been added to Column (8) for the packing group II and III entries for this substance.

Ammonium nitrate based fertilizer UN 2067

In SP 307, paragraph (b) in Chapter 3.3, "and/or mineral calcium sulphate" has been added after "dolomite" as one of the accepted components in an ammonium nitrate based fertilizer composition.

This amendment was made following a proposal from the industry to reflect formulations used in practice.

Lead compounds, soluble, n.o.s. UN 2291

SP 199 in Chapter 3.3 has been amended to clarify that these compounds when tested in accordance with ISO 3711:1990 and considered insoluble, are not subject to the requirements of ADR as a toxic material with the new text "unless they meet the criteria for inclusion in another class." added at the end.

Water-reactive compounds UN 2813, 3129, 3131 and 3148

New portable tank instructions together with corresponding portable tank special provisions have been added in columns (10) and (11) for these water-reactive liquid or solid n.o.s. entries (UN 2813, UN 3131 packing group I and UN 3129, UN 3148 all packing groups)

consistent with the guidelines for assigning portable tank requirements.

Similarly ADR tank codes together with appropriate tank special provisions have been added in columns (12) and (13) against UN 2813 and UN 3131 packing group I in line with the rationalized approach.

This provides industry with more flexibility in the means of transporting these groups of substances by allowing them to be carried in tanks now for all packing groups.

Lithium cells and batteries UN 3090, 3091, 3480 and 3481

New separate entries for lithium ion batteries (UN 3480 and UN 3481) have been added in Table A of Chapter 3.2 with the consequence that the existing entries UN 3090 and UN 3091 deal with lithium metal batteries.

Special Provisions SP 188 and SP 636 for lithium cells and batteries in Chapter 3.3 have been amended in the light of developments in lithium cell/battery technology and to take account of the new entries for lithium ion batteries.

Revised provisions in P903b for packing of used lithium cells and batteries have been included in Chapter 4.1 and Packing Instructions P903 and P903a adapted to include the new entries.

The majority of these changes and those relating to fuel cell cartridges (see below) were proposed by industry (USA and Japan mainly). The changes follow a series of fires mainly on aircraft.

Ethanol and gasoline/motor spirit/petrol mixture, with more than 10% ethanol UN 3475

Rather than rely on the existing entry of UN 1987 with an associated Special Provision (see UN 1170, 1987 and 1993 and the related Special Provision SP 330 above), a separate UN entry has been created to cover these fuel mixtures with the relevant conditions of carriage including Special Provision SP 333 to the effect that these mixtures used in spark ignition engines shall be assigned to UN 3475 regardless of variations in volatility.

Although these new fuel mixtures are not yet widely available in Ireland, having a separate entry available will facilitate their carriage in the future.

Fuel cell cartridges UN 3476, 3477, 3478 and 3479

New entries for fuel cell cartridges (UN 3478 and UN 3479) under Class 2, Classification Code 6F have been added to 2.2.2.3

Four new entries have been included in Table A of Chapter 3.2, viz

UN 3476	FUEL CELL CARTRIDGES, containing water-reactive substances
UN 3477	FUEL CELL CARTRIDGES, containing corrosive substances
UN 3478	FUEL CELL CARTRIDGES, containing liquefied flammable gas
UN 3479	FUEL CELL CARTRIDGES, containing hydrogen in metal hydride

Special Provision SP 328 (which currently applies only to UN 3473, the Class 3 entry for fuel cell cartridges) has been expanded in its application and extended to apply to the new entries and in addition, two new Special Provisions have been added to Chapter 3.3 viz: -

SP 338	for fuel cell cartridges (UN 3478) with detailed performance and test requirements, and
SP 339	for fuel cell cartridges (UN 3479) with detailed performance and test requirements.

New Packing Instruction P004 has been added to Chapter 4.1 for these fuel cell cartridges (UN 3473, 3476, 3477, 3478 and 3479). For UN 3473 this replaces Packing Instruction P003 and this entry has been expanded in line with the 4 new entries to cover fuel cell cartridges contained in equipment or packed with equipment.

All these new entries provide for the future carriage for fuel cell technology

V10 UN 2811 (V12 also), 2921, 2923, 2928, 2930, 3288 (V12 also) and 3290

ADR requires intermediate bulk containers (IBCs) containing certain substances assigned to packing group II to be carried in closed or sheeted vehicles or in closed or sheeted containers as set out in the special provisions in 7.2.4. There is however no such requirement for the same substances in packing group I. The above V special provisions have been added to the substances listed above in Table A of Chapter 3.2 for consistency of approach.

V11 UN 1473, 1484, 1485, 1487, 1488, 1490, 1493, 1494, 1495, 1512, 1514, 1751, 2212, 2465, 2468, 2590, 2627, 2969, 3152, 3247, 3432 and 3444

This requirement in Section 7.2.4 which requires IBCs other than metal or rigid plastics IBCs to be carried in closed or sheeted vehicles or closed or sheeted containers, has been added to column (16) of Table A of Chapter 3.2 for these substances again for consistency of approach.

Special Provisions - Chapter 3.3

SP 289 has been amended to replace "Air bags or seat belts" by "Air bag inflators, air bag modules or seat-pretensioners" to align the text with the proper shipping name.

New SP 340 has been added for UN 3269 polyester resin kits and chemical and first aid kits of UN 3316, to reflect the application of the excepted quantities provisions of new Chapter 3.5 to these kits.

Limited Quantities - Chapter 3.4

Amendments have been made to the provisions for the carriage of limited quantities. New requirements for the use of orientation labels have been introduced in 3.4.8 as have new requirements for the marking of vehicles and containers in 3.4.9 to 3.4.13. The marking shall consist of "LTD QTY" in black letters not less than 65 mm high on a white background. The location of the marking is the same as for orange-coloured plates or placards. Alternatively, if sea transport is also involved, marking according to the IMDG Code is acceptable.

The requirement for marking a vehicle or container will only apply to loads of limited quantities in excess of 8 tonnes gross weight on vehicles with a tare weight in excess of 12 tonnes and if orange-coloured plates (or placards on the container) are not already displayed.

To deal with consolidated loads, consignors are required to inform carriers of the total gross mass of limited quantities to be consigned in advance of carriage. As there is no weight limit threshold before marking is required under the IMDG Code, this prior notification is not required where a sea journey is involved.

By a new transitional measure in 1.6.1.18, the new provisions in 3.4.9 to 3.4.13 need only be applied from 1 January 2011.

The new marking requirements will entail some extra cost for the carriage of larger loads of limited quantities. However as they only apply to vehicles greater than 12 tonnes with loads over 8 tonnes, this cost is likely to be relatively small.

Excepted Quantities - Chapter 3.5

A new Chapter 3.5 has been introduced to provide for the carriage of dangerous goods packed in excepted quantities. These provisions which are now also introduced for sea transport are very much based on the system for excepted quantities that has been used in air transport for many years. These quantities are smaller than those permitted under the limited quantities arrangements in Chapter 3.4. Excepted quantities meeting the requirements of Chapter 3.5 are exempt from the other requirements of ADR except for training requirements of Chapter 1.3, classification procedures and packing group assignment in Part 2 and the general packaging requirements in Chapter 4.1 (sub-paragraphs 4.1.1.1, 4.1.1.2, 4.1.1.4 and 4.1.1.6).

The new Chapter includes the appropriate thresholds of maximum net quantity per inner and outer packagings (Codes E0 (not permitted as excepted quantities) to E5 inclusive), requirements for packagings and package testing, marking of packages with the excepted quantities mark, maximum number of packages per vehicle or container (not more than 1000) and the declaration if there is any accompanying documentation.

A new column (7b) has been added to Table A to the Dangerous Goods List to include the coding for the carriage of excepted quantities. Existing column (7) for Limited Quantities becomes column (7a).

An E Code in the range E0 to E5 has been added to all entries in Table A of Chapter 3.2.

This represents harmonization with the other modes of transport and a relaxation that will facilitate the carriage of small quantities of dangerous goods, e.g. for testing purposes and particularly for carriage by road to and from airports.

Packaging issues – Chapters 4.1 and 6.1

A number of amendments have been made to the packaging arrangements in Chapters 4.1 and 6.1. These include: -

1. deletion of particular requirements (PR1 to PR7) for gas cylinders and receptacles in 4.1.4.4. As a consequence the addition of new provisions for testing of pressure receptacles in Packing Instruction P402 with new special packing provisions RR7 (UN 3129) and RR8 (UN 1389, 1391, 1411, 1421, 1928, 3129, 3130 and 3148)

   Also the addition of new provisions for testing of pressure receptacles in Packing Instruction P601 with new special packing provisions RR7 (UN 1251) and RR10 (UN 1614)

   Overall this offers some simplification of the system and is a relaxation for industry.

2. P099, IBC99 and LP99 for packaging approved by the competent authority, a copy of the approval must accompany the consignment or the transport document must indicate the packaging was approved by the competent authority

3. a footnote has been added to 6.1.1.4 which refers the user of ADR to ISO 16106:2006 for acceptable guidance on the application of ISO 9001 in any quality assurance programme for the manufacture, reconditioning and testing of packages for dangerous goods (the same note has been added to 6.3.2.2, 6.5.4.1 and 6.6.1.2 for Class 6.2 packagings, IBCs and large packagings)

   This ISO Standard is a guidance document and the impact on Irish industry should be small as the Irish QA system is different.

4. a note has been added to 6.1.2.6 to clarify that the term "plastics materials" will include other polymeric materials such as rubber

5. 6.1.3.1(a)(i) has been expanded to stress that the UN symbol shall only be used to certify that a packaging complies with the relevant and appropriate Chapters in ADR and 6.1.3.1(a)(ii) amended to emphasis that the "RID/ADR" symbol only relates to transport operations under RID/ADR/ADN and is not necessarily acceptable for carriage by other modes of transport

6. the specification for the target in 6.1.5.3.4 for the drop tests has been expanded to provide more detail and clarification of the requirements.

Most of the changes reflect harmonization with the UN Recommendations.

Portable tanks and UN Multiple-element gas containers (MEGCs) – Chapters 4.2 and 6.7

Following a review of the guiding principles for tanks in the UN Recommendations and the associated allocation of portable tank instructions, the portable tank instructions for a number of substances have been reassessed and amended where appropriate. Invariably this has entailed assigning a more stringent portable tank instruction than previously allocated.

For UN 1092, UN 1238, UN 1239 and UN 1244, in Table A of Chapter 3.2, in column (10), "T14" has been replaced by"T22" and for UN 1098, UN 1143, UN 1163, UN 1595, UN 1695, UN 1752, UN 1809, UN 2334, UN 2337, UN 2646 and UN 3023 in column (10), "T14" has been replaced by "T20". For all the substances listed, "TP35" has been added in column (11). By new transitional measure 1.6.4.31, for substances where new TP35 is assigned in column (11) of Table A of Chapter 3.2, portable tank instruction T14 prescribed in ADR applicable up to 31 December 2008 may continued to be applied until 31 December 2014.

The transport of these particular substances will entail extra costs; however the imposition of these costs is deferred by the longer than usual transitional measures.

In a parallel exercise, provision has been made for further substances to be carried in portable tanks using portable tank instructions T20 and T22. Portable tank instructions and special provisions have been added in columns (10) and (11) for UN 1185, UN 1647, UN 1994 and UN 2480.

This facilitates the carriage of these substances by providing the extra option of carriage in tanks.

Paragraphs 6.7.5.3.2 and 6.7.5.4.1 have been reworded to replace 'assemblies' by 'groups' since the MEGC is the assembly and the number of pressure receptacles which make up a volume not more than 3000 litres is better termed a group. This is just the regulations being reworded to match what practitioners in the industry already knew was intended.

Marking and labelling – Chapter 5.2

There have been a number of amendments in the "Provisions for labels" in 5.2.2.2.

1. 5.2.2.2.1 has been amended to allow for the minor variations in the corresponding labels that are used for other modes of transport, provided the obvious meaning of the label is not affected

2. 5.2.2.2.1.1 has been clarified in relation to the colour of the line to be set 5 mm inside the edge of the label such that in the upper half the line shall be the same colour as the symbol and in the lower half the same colour as the figure in the bottom corner (a similar amendment has been made to 5.3.1.7.1(a) for placards)

3. 5.2.2.2.1.2 has been updated to show the year (2005) of the latest version of ISO 7225 in relation to shoulder labels for cylinders of Class 2

4. the text of 5.2.2.2.1.3 has been reordered and clarified that the text can include the UN number and words describing the hazard (such as "flammable liquid" as already used in the IMDG Code) provided other required labelling elements are not obscured

5. 5.2.2.2.1.4 has been editorially amended to indicate what needs to be shown where on the label in relation to the Class number for explosives of Class 1 (as is already shown in the illustrations of the labels in 5.2.2.2.2)

6. 5.2.2.2.1.6 has also been editorially amended with a new (c) to indicate that the symbol for the Class 5.2 label may also be shown as white (as is already shown in the illustrations of the labels in 5.2.2.2.2).

Placarding and marking - Chapter 5.3

By new 5.3.1.1.6 and 5.3.2.2.5, when placarding/orange-coloured plates/alternative markings are affixed to a folding panel, the panel shall be designed and secured so that it cannot unfold or come loose from the holder during carriage (especially as a result of impacts or unintentional actions).

This simply formalizes an existing implicit requirement and should have no impact on current best industry practice.

5.3.2.1.6 has been amended such that it would apply if only dangerous goods and no non-dangerous goods are being carried in relation to compartmented tanks.

This is likely to entail extra cost as these simplified arrangements no longer apply if dangerous goods and non-dangerous goods are being carried together. Now they will have to be carried separately or more brackets fitted to show the marking for each tank compartment.

By 5.3.2.1.5, if orange-coloured plates are not clearly visible from outside the vehicle, the same plates are to be fixed to both sides of the vehicle. By a new note added to this sub-paragraph, this requirement need not apply to the marking with orange-coloured plates of closed and sheeted vehicles carrying tanks with a maximum capacity of 3000 litres.

This follows a proposal from industry and represents a relaxation for the carriage of smaller tanks.

In addition 5.3.2.2.1 and 5.3.2.2.2 have been amended to require that orange-coloured plates and any interchangeable numbers and letters presenting the hazard identification number and the UN number shall remain in place during carriage and irrespective of the orientation of the vehicle (e.g. in the case of an incident or accident).

This simply formalizes an existing implicit requirement and should have no impact on current best industry practice.

A transitional measure has been introduced in new 1.6.1.13 whereby for vehicles first registered or which first entered service before 1 January 2009, the new requirements of 5.3.2.2.1 and 5.3.2.2.2 in relation to plates, numbers and letters need not be applied until 31 December 2009.

The last sentence of the first paragraph of 5.3.2.2.1 allowing the reduction in the size of the marking, has been made into a new paragraph. To this paragraph a new sentence has been added that in the case of packaged radioactive material carried under exclusive use, only the UN number is required and the size of the digits stipulated in 5.3.2.2.2 may be reduced to 65 mm in height (instead of 100 mm) and 10 mm in stroke thickness (instead of 15 mm).

This represents a relaxation from the existing requirements.

In 5.3.2.3.2, hazard identification numbers 423 and X423 have been amended to include flammable solids or solids which react with water emitting flammable gases and self-heating solids which react with water emitting flammable gases. This was to cater for the new entries for UN 3132 and UN 3135.

In addition, a new hazard identification number, X432, had been inserted for spontaneously flammable solids which react dangerously with water emitting flammable gases.

To correct an error in Table A of Chapter 3.2, the hazard identification number for UN 3391 has been amended from "333" to "43" and that for UN 3393 from "X333" to "X432".

The changes relating to hazard identification numbers (HINs) are likely to have little or no impact. For national transport emergency action codes are required instead of HINs.

Documentation – Chapter 5.4

A number of amendments have been made including: -

1. new declaration requirements have been introduced in 5.4.1.1.6.4 for empty, uncleaned, tank-vehicles, demountable tanks, battery-vehicles, tank-containers and MEGCs and 5.4.1.1.11 amended to include portable tanks and UN MEGCs being carried after the expiry of the periods required for inspections for the purpose of undergoing inspections

   This is likely to entail some extra documentation costs.

2. footnote 6 to 5.4.1.4.2 has been expanded to include additional and updated documents that can be referred to for multimodal carriage

3. in footnote 8 to 5.4.2, amendments made to the text quoted from the IMDG Code have been included in a new 5.4.2.3 which now permit the use of facsimile signatures or the signature may be replaced by the name(s) of the person(s) authorized to sign when documentation is presented to the carrier by means of electronic data processing or electronic data interchange transmission techniques in the sea mode.

   This represents a relaxation in providing further or simplified options with the increasing use of electronic means for documentation.

Instructions in writing – Chapter 5.4 and Equipment on vehicles – Chapter 8.1

The requirements for instructions in writing in 5.4.3 have been considerably amended. These are now in a form specified in 5.4.3.4 and consist of a four page model aimed at standardizing the format and content of the instructions across all Contracting Parties.

The instructions shall now be provided by the carrier, rather than the consignor, to the vehicle crew.

They shall be provided in languages that each crew member can read and understand before the commencement of the journey but not now in all the languages of the countries of origin, transit and destination (if these are different). Members of the vehicle crew must inform themselves of the dangerous goods loaded and consult the instructions in writing for details of accident or emergency actions.

The four page model of the instructions in writing consists of: -

1. the actions the vehicle crew shall take in the event of an accident or emergency, on the first page

2. additional guidance on the hazard characteristics of dangerous goods by class and on actions subject to prevailing circumstances, on the next two pages

3. equipment for personal and general protection to be carried on board the vehicle, on the last page.

There are some changes to the equipment to be carried on vehicles and the corresponding changes have been made to 8.1.5 as well as the inclusion of a list of all this equipment at the end of the instructions in writing.

When dangerous goods are being carried, other than those in Classes 1 or 2, eye rinsing liquid must now be provided on the vehicle. A pair of protective gloves and eye protection for each vehicle crew member is required. In addition emergency escape masks are now required for substances meeting the toxicity criteria of Class 6.1 (in Class 6.1 or as a subsidiary hazard – danger label number 6.1) as well as when toxic gases are carried. (As a consequence additional requirement S7 of 8.5 has been deleted) Also a shovel, a drain seal, and a collecting container made of plastics are required when carrying dangerous goods with danger labels numbers 3, 4.1, 4.3, 8 and 9.

It is recognized that in some cases it may be necessary to transmit additional information to drivers e.g. telephone numbers where additional emergency related advice can be obtained. However such information should not compromise the format of the 4 page model instructions in writing described in 5.4.3.4 and should therefore appear in a separate document.

In addition, 8.1.2.3 has been amended to require that the instructions in writing are kept readily available, and 8.1.2.4 consequentially deleted.

This simplification to the instructions in writing has generally been welcomed by industry even though this will entail extra cost in the provision of some new equipment on the vehicle.

Fumigated vehicles, containers and tanks – Chapter 5.5

5.5.2.2 has been amended to require the warning sign for fumigation to remain on the transport unit until it has been ventilated to remove harmful concentrations of the fumigant gas and the fumigated goods or materials have been unloaded. In addition in 5.5.2.3 the date of ventilation has been added to the fumigation warning sign.

This is likely to involve a modest cost but should help reduce instances of people entering containers before they are free of fumigants and being overcome.

Infectious substances – Class 6.2

2.2.62.1.12 has been amended such that animal material infected by pathogens of Category B shall be assigned UN 3373 and a new second entry for UN 3373 Biological substance, Category B (animal material only) added to Table A in Chapter 3.2 to deal with such carriage. This includes provision for carriage in bulk containers BK1 and BK2, and 7.3.2.6 has been amended accordingly. A new transitional measure has been included in 1.6.1.16 to allow animal material affected by pathogens in Category B to still be carried as determined by the Competent Authority until 31 December 2014.

This considerably facilitates the transport of dead animals affected by disease.

Some amendments have been made to the packing provisions in Packing Instructions P620 and P650 in Chapter 4.1.

Extensive amendments have been made in Chapter 6.3 to the requirements for the construction and testing of packaging for infectious substances of Class 6.2. This was needed to update it, to align it with other packaging chapters and ensure compatibility with Packing Instruction 620. The amendments include new packaging requirements, marking and amendments to the package performance tests and their frequency. As a result, consequential amendments have been made to the special packing provisions of 4.1.8 including the use of alternative packaging for animal material.

Intermediate Bulk Containers (IBCs) – Chapter 6.5

Amendments have been made to Chapter 6.5 to harmonize with the UN Recommendations and now include a vibration test in 6.5.6.13 as a design type test for all IBCs used for liquids, manufactured after 31 December 2010.

This new test will entail a considerable cost to industry and there are likely to be practicable problems with the largest IBCs (the size of the vibration table may not be large enough).

As consequence, a transitional measure has been introduced in new sub-paragraph 1.6.1.14, whereby IBCs manufactured before 1 January 2011 in accordance with ADR in force up to 31 December 2010 and which conform to a design type that has not passed the vibration test, may still be used.

In addition, IBCs capable of being stacked shall be marked with the maximum permitted stacking load. A transitional measure has been introduced in new 1.6.1.15 whereby IBCs manufactured, remanufactured or repaired before 1 January 2011 need not be marked with the maximum permitted stacking load and may still be used after 31 December 2010 but must be marked with the maximum permitted stacking load if remanufactured or repaired after that date.

This will entail some cost to industry. However there have been several recent accidents with IBCs stacked on premises (not strictly transport) and these marks may help to reduce them as the IBC manufacturer will decide the stack loading and it is not left to guesswork or trying to interpret the UN mark.

Large packagings - Chapter 6.6

Amendments have been made to Chapter 6.6 mainly mirroring those made to the other packaging Chapters which are common to all, viz guidelines to the application of ISO 9001, use of the UN mark and target specification for the drop test.

Loading, unloading and handling - Chapter 7.5

An amendment has been made to the mixed loading Table in 7.5.2.1 which would permit the mixed loading of packages bearing labels conforming to model 5.2 with those bearing labels conforming to models 5.2 and 1.

This resulted from a proposal from industry and represents a cost saving as all organic peroxides can now be carried together.

In addition, the text in footnote (d) to the Table has been amended to clarify that alkali and alkaline earth metal nitrates as well as ammonium nitrates can be loaded with certain blasting explosives.

The limitations of the quantity that may be carried with respect to organic peroxides and self-reactive substances in 7.5.5.3 have been simplified into a unified figure to take into account what is permitted for sea transport. The maximum quantity of these substances of Types B, C, D, E or F that may be carried in a single transport unit, is limited to 20,000 kg in all cases. This represents an increase for substances of Types B and C.

This represents a relaxation for industry for certain types of product.

A new footnote 1 has been added to 7.5.7.1 as a non-binding reference to the European Commission's code of practice for handling and stowage. Reference is also made to other guidance available from Competent Authorities and industry bodies which will include the UK Department for Transport's code of practice on safety of loads on vehicles.

Vehicle crew training

8.2.1.4 and additional requirement S1(1) of 8.5 have been amended to clarify that drivers of vehicles carrying explosives of Division 1.4, Compatibility Group S are exempt from attending a general driver or specialization training course.

Miscellaneous vehicle crew requirements – Chapter 8.3

The text in 8.3.7 has been modified to the effect that trailers without braking devices need to be restrained from moving by applying at least one wheel chock. In addition a new 8.3.8 has been included to the effect that in the case of a transport unit equipped with an anti-locking braking system, consisting of a motor vehicle and an O_3 or O_4 trailer, the electrical connection device referred to in 9.2.2.6.3 shall be connecting the towing vehicle and trailer at all times during carriage.

Supervision of vehicles – Chapter 8.4

The scope of this Chapter relating to supervision of vehicles has been extended from special provisions "S1 (6) and S14 to S21 of Chapter 8.5" to"S1 (6) and S14 to S24 of Chapter 8.5" (qv below).

Additional requirements – Chapter 8.5

For vehicles carrying explosives of Class 1, the text of additional requirement S1 (paragraph (3)) in 8.5 has been amended so that smoking is not permitted during carriage, in their vicinity and during loading and unloading. A new paragraph (7) has been added to S1 requiring the load compartments of EXII and EXIII vehicles to be locked during transport excluding during loading and unloading.

The prohibition on smoking and the locking of load compartments should have little impact as they represent industry best practice and certainly in the case of no smoking was a requirement of former domestic legislation.

In addition there have been a number of amendments to the other special provisions (S1(6), S14, S15 and S20) and the addition of new special provisions S21 to S24 detailing new thresholds for certain substances concerning the supervision of vehicles. Consequential amendments have been made to Table A in Chapter 3.2. The amendments stem from the security provisions in Chapter 1.10 and the perceived need to be consistent between the two sets of requirements.

It is difficult to gauge the likely impact of these changes but costs are likely to occur from supervision of smaller loads.

Approval of vehicles – Chapter 9.1

Under the annual technical inspection requirements of 9.1.2.3 for EX/II, EX/III, FL, OX and AT vehicles, an amendment means that where these vehicles are trailers or semi-trailers attached to a drawing vehicle, the drawing vehicle will no longer be subject to technical inspection for the same purposes.

Construction of vehicles – Chapter 9.2

This Chapter has been updated to refer to current EU Directives or ISO Standards. In 9.2.1 "Directive 92/6/EEC" has been replaced by "Directive 92/24/EEC", in 9.2.2.6.3 the latest versions of ISO Standards 12 098 and 7638 respectively "2004" and "1997" are now referred to and in footnote 7 to 9.2.5 the reference to directive 92/6/EEC has been deleted.

Mobile Explosives Manufacturing Units (MEMUs)

Mobile Explosives Manufacturing Units (MEMUs) are used for the on-site production of explosives for civil use. These mobile units carry various dangerous goods on the road and new text has now been included in ADR to apply specifically to MEMUs.

A new Chapter 4.7 entitled "Use of Mobile Explosives Manufacturing Units (MEMUs)" has been created detailing the requirements for the Use (Section 4.7.1) and Operation (Section 4.7.2) of MEMUs.

A new Chapter 6.12 entitled "Requirements for the Construction, Equipment, Type approval, Inspection and Tests, and Marking of Tanks, Bulk Containers and Special Compartments for Explosives of Mobile Explosive Manufacturing Units (MEMUs)" has been created including: -

6.12.	Scope	6.12.4	Items of equipment
6.12.2	General provisions	6.12.5	Special compartments for tanks
6.12.3	Tanks		

Chapter 7.5 has been amended with new provisions in 7.5.5.2.3 dealing with the loading, unloading and handling of MEMUs.

Chapter 8.4 has been amended by adding a new 8.4.2 (the existing text to be numbered 8.4.1) requiring loaded MEMUs to be supervised or alternatively being parked, unsupervised, in a secure depot or secure factory premises. Empty uncleaned MEMUs are exempted from this requirement.

A new Chapter 9.8 entitled "Additional Requirements concerning Complete and Completed MEMUs" has been created detailing in: -

9.8.1 General provisions
9.8.2 Requirements concerning Tanks and bulk containers
9.8.3 Earthing of MEMUs
9.8.4 Stability of MEMUs
9.8.5 Rear protection of MEMUs
9.8.6 Combustion heaters
9.8.7 Additional safety requirements
9.8.8 Additional security Requirements

Consequential amendments have been made in: -

1.2.1 Definitions. A MEMU is a unit or a vehicle mounted with a unit, for manufacturing and charging explosives from dangerous goods that are not explosives. The unit consists of various tanks and bulk containers and process equipment as well as pumps and related equipment. The MEMU may have special compartments for packaged explosives.

1.6.5 A new transitional measure has been created in 1.6.5.11 to allow the carriage of existing MEMUs, constructed and approved before 1 January 2009 under national law and which do not meet these new requirements.

5.1 MEMUs are now referred to in 5.1.3 and 5.1.3.1.

5.3 MEMUs now referred to in 5.3, 5.3.1.1.1, 5.3.1.1.2, 5.3.1.1.4, 5.3.1.4, 5.3.1.6, 5.3.1.6.1 and 5.3.2.1.7 as regards placardingand marking. In addition 5.3.1.4 has been amended to include the placarding requirements for MEMUs and the requirements of 5.3.2.1.2 have been amended so that for MEMUs the requirements only apply to tanks with a capacity of more than 1,000 litres and bulk containers.

5.4 MEMUs are now referred to in 5.4.1.1.6.2.2.

8.2.1 MEMUs are now referred to in 8.2.1.3 and 8.2.1.4 in relation to driver training including a specialization training course.

9.1 MEMUs are now referred to in various places in relation to approval. This includes in 9.1.2.2 that in the case of MEMU vehicles, the type approval mark may identify the vehicle as either MEMU or EX/III.

It is understood that that there are 2 manufacturers of MEMUs in Ireland and that the new provisions essentially represent current industry practice. It is believed that they are generally welcomed as

a uniform set of rules (level playing field) and will facilitate sales of MEMUs to the rest of Europe. Because of this and the fact that investment in the production of these MEMUs was made about 5 years ago, these new provisions are unlikely to involve significant new costs to the industry.

PRESSURE RECEPTACLES – CARRIAGE OF GASES

Transitional measures in 1.6.2

1.6.2.5 This transitional measure has been revised to make its meaning clearer, but its effect remains unchanged. The table of Standards in 6.2.4 now lists current and superseded standards with their dates of application. This transition measure has been revised to reflect this since it was previously difficult to know which were the "standards . . . no longer listed".

1.6.2.6 This measure allows non Class 2 substances to be carried in pressure receptacles which either conform to 4.3.1.6 if built after the coming into force of these regulations or, if built previously, the substances shall be carried in conformity with 4.1.4.4 from the 2007 ADR.

1.6.2.7 With the transfer of parts of Council Directive 1999/36/EC on Transportable Pressure Equipment (as amended) (TPED) into ADR, a new Directive is required. This revised TPED is expected by the end of 2010. This transitional measure allows Contracting Parties to change over to the new provisions in ADR by 1 July 2011 at the latest and avoid potential conflicts between the 1999 TPED and ADR 2009.

Checks and other support measures - Chapter 1.8

New Sections 1.8.6 and 1.8.7 have been added dealing with the administrative controls and procedures for conformity assessments, periodic inspections and exceptional checks, including applications, type approvals, supervision of manufacture, initial inspection and tests, periodic inspection and exceptional checks, surveillance of the applicant's in-house inspection service, technical documentation and an acceptable Standard.

Overview: -

The creation of these new sections is the result of a project to transfer TPED into ADR. All that was transferred was: -

- the characteristics necessary for inspection bodies (the ADR term for notified and approved bodies) and their appointment
- text which replaces the modules of the TPED (for construction and periodic inspection)

Details: -

1.8.6 This section covers the relationship between the competent authority (CA) and the inspection body (IB) and the characteristics that an IB must have.

1.8.6.1 Approval i.e. appointment of IBs is optional and the relevant duties of IBs are conformity assessment, periodic inspection and exceptional checks (of tanks, battery-vehicles and MEGCs). Notification to UN ECE is not mentioned, but is required under 1.8.4.

1.8.6.2 The CA must actively monitor the competence of IBs and revoke or restrict their approval as necessary.

1.8.6.3 CA duties to maintain continuity if an IB ceases to operate or if its approval is restricted or revoked.

1.8.6.4 Characteristics of an IB; this text is from UN pressure receptacles of Chapter 6.2 and is very similar to TPED and EN ISO 17020:2004. This paragraph additionally requires that IBs shall be accredited according to the Standard EN ISO 17020:2004. It also gives a transitional arrangement to cover the first year of an IBs existence when no history exists to enable accreditation.

1.8.7 This Section describes the procedures of conformity assessment and periodic inspection. Since the CA is not obliged to appoint IBs, but can carry out the conformity assessment itself or via a deputy, this Section introduces the term relevant body (RB) to cover the body responsible for conformity assessment, etc. In some places, the text uses the term inspection body but this probably should be relevant body throughout.

Unlike the TPED, the quality assurance route is not spelled out in modules. The inspection body approves a quality system of the "in-house inspection service" and delegates the inspections as a whole or in part. The IB must carry out twice yearly audits of the quality system. The in-house inspection service can be a manufacture's inspectors or a periodic inspection shop. This quality assurance route is only available for pressure receptacles. Third party inspectors are usually required for tanks, battery-vehicles and MEGCs. This is a clear limitation of options as compared to TPED, but reflects actual practice.

The procedures cover only TPED conformity assessment modules B + D and B + F. There is flexibility for the IB to delegate more or less to the in-house service. This reflects practice for the vast majority of ADR pressure equipment. The option to use A1, D1 or E1 for pressure receptacles of not more than 300 bar litres was lost in the Joint Meeting.

Periodic inspection of tanks, battery-vehicles and MEGCs is usually done by third party inspectors. The quality assurance route is available for periodic inspection of pressure receptacles and this effectively replaces Module II of TPED. The equivalent of a TPED Approved Body is a user inspectorate conforming to EN ISO 17020:2004 Type B. The type B body has no role in conformity assessment, but can undertake periodic inspection of its own pressure receptacles. Cylinder Inspection companies in Ireland that currently provide inspection services for other organisations (i.e. are Type C), so will have to migrate to operating with a quality system under the surveillance of an IB.

1.8.7.1.1 The types of relevant body applicable for the procedures of this Section are defined in 6.2.3.6 and TA4 and TT9 of 6.8.4. Their application is mandatory for Chapter 6.8 tanks, battery-vehicles, MEGCs and ADR pressure receptacles but for UN pressure receptacles, their application in 6.2.2.9 is optional. If 1.8.7 procedures are not used for UN pressure receptacles, the procedures of 6.2.2.5 and 6.2.2.6 shall be used. The procedures of 1.8.7 fall within the procedures of the UN, but some options of the UN are not replicated in 1.8.7.

1.8.7.1.2 A new definition in 1.2.1 explains that an applicant is a manufacturer (or his representative) for conformity assessment and in the case of periodic inspection is a testing facility or operator (or their respective representative).

The applicant applies to an RB for;
- Type approval
- Supervision of manufacture and initial inspection and test
- Periodic inspection and exceptional checks.

1.8.7.1.3 Details the data required in the application.

1.8.7.1.4 Permits the applicant to establish an in-house inspection service for pressure receptacles subject to satisfying the IB that it conforms to 1.8.7.6.

1.8.7.2 Describes the RB duties for type approval and details the contents of the certificate.

1.8.7.3 Describes the RB's and manufacturer's duties for supervision of manufacture.

1.8.7.4 Describes the RB's and manufacturer's duties for initial inspection and test and the contents of the certificate.

1.8.7.5 Describes the RB's duties for periodic inspection and exceptional checks.

1.8.7.6 Describes applicant's and the IB's duties for surveillance of the in-house inspection service. The IB must audit the quality system at lease twice yearly and ensure appropriate corrective actions are implemented.

1.8.7.7 Describes the documents required for each procedure.

It is hard to estimate the impact of this new system. On the one hand, it is a simplification of the TPED. On the other, there will be costs in understanding and adapting to the new language. The CA will be obliged to use accreditation and according to 1.8.4 have to notify IBs to UN ECE, as well as the EC under the new TPED. Type C bodies in Ireland will need to engage a sympathetic IB for surveillance of their quality system.

Packing instruction P 200 in 4.1.4.1 and Standards listed in 4.1.6.14

(2) New text is introduced to bring in the requirement for pressure relief devices (PRDs) on UN pressure receptacles containing UN 1013 Carbon dioxide and UN 1070 Nitrous oxide. There should be minimal impact on the practice in Ireland and none in Europe since UN cylinders are almost unknown and are not likely to be used for these gases. (Ireland fits PRDs to carbon dioxide but not generally to nitrous oxide.)

(5)(b) New text is added to account for special provision 'r'. There is no general impact.

(10) 'k' and 'n' are revised to clarify requirements for a unique German practice with UN 1045 Fluorine. There is no impact for Ireland.

'r' is introduced to limit the filling ratio of gases which are liable to decompose. 'r' is applied to UN 2192 Germane and UN 2676 Stibine.

'z' is modified to take account of those mixtures of Germane which may or do not decompose.

The changes to introduce 'r' and change 'z' are a case of the regulations catching up with industry safe practice here; no impact for Ireland is expected.

(11) Standard EN 1439 will be updated from the 2005 to the 2008 version if published in time. It concerns 'procedures for checking cylinders before, during and after filling' with LPG. No impact for Ireland is expected since this revision should reflect current industry safe practice.

Table 1: -

Test pressure increased and working pressure reduced for UN 1660 Nitric oxide to take account of new estimates of the likely dissociation of this gas. This may have a very minor impact on the costs of imported Nitric oxide which is used in exceedingly small quantities for experimental clinical practice.

Table 2: -

Special packing provision 'c' has been deleted from UN 2203 Silane. Steels resistant to hydrogen embrittlement are no longer required. See comment on 6.2.2.2.

The test pressures of UN 2189 Dichlorosilane and UN 2676 Stibine have been increased from 10 and 20 bar respectively to 200 bar to account for possible dissociation. The filling ratios of Stibine and UN 2192 Germane have been decreased for the same reason. These figures should now reflect industry good practice and should be negligible or no cost impact.

There are many changes to filling ratios and test pressures. These are the result of new and more accurate information on the gases concerned coming from a joint American/German project. All the changes in test pressures are reductions and so will have no immediate impact since existing cylinders can continue to be used. There is one exception for UN 2204 Carbonyl sulphide for which the test pressure is increased from 26 to 30 bar, but this is not a widely used gas and 30 bar test pressure cylinders (made in vast numbers for LPG) are cheap and readily available.

The changes in filling ratios will necessitate renegotiation with customers where the ratio is reduced. However, the reductions are smaller in number than the increases and it is highly probable that domestic traffic based on the filling instructions in BS 5355 and its successor BCGA CP35, will be unaffected. The raised fill ratios could enable some small cost and even price reductions due to more efficient use of cylinders. In the short term, there may be the costs of revamping filling instructions.

In the list of Standards in 4.1.6.14 that must be applied for UN pressure receptacles and that may be applied to other pressure receptacles, the reference to "EN 1795:1997" has been deleted and "ISO 11621:1997" has been replaced by "ISO 11621:2005". In addition against the references to EN 13152 and EN 13153, "A1:2003" is to be added.

Construction and testing of pressure receptacles – Reorganization of Chapter 6.2

For 2009, this Chapter is organized as follows: -

6.2.1 General requirements
6.2.2 Requirements for UN pressure receptacles
6.2.3 General requirements for non-UN pressure receptacles
6.2.4 Requirements for non-UN pressure receptacles designed, constructed and tested according to standards
6.2.5 Requirements for non-UN pressure receptacles not designed, constructed and tested according to standards
6.2.6 General requirements for aerosol dispensers, small receptacles containing gas (gas cartridges) and fuel cell cartridges containing liquefied flammable gas

Previously the text for design, construction and testing of ADR pressure receptacles came first in this chapter, followed by additional requirements for UN pressure receptacles. In 2009 the UN pressure receptacles come first in 6.2.1 and 6.2.2 and appear entirely unchanged from the 15th Revision of the UN Model Regulations. 6.2.3 gives the requirements which modify the UN requirements. Originally as drafted, 6.2.3 followed the same sequence of requirements as 6.2.1, so for example, periodic inspection requirements were in 6.2.1.5 modified for ADR by 6.2.3.5. Unfortunately, the order of sections in the UN Model Regulations has been changed in the 15th Revision, so the sections are no longer aligned numerically, but the headings and cross references make clear the relationship between the requirements.

It follows that it is now necessary to read both sections when constructing non-UN pressure receptacles.

There will be some training or learning costs associated with becoming familiar with these changes, and these will fall on equipment manufacturers and inspection bodies. However, these people for the most part work from the Standards, which are mostly unchanged – see the Standards review below. The costs, therefore, should not be excessive, but somewhat above the usual costs of assimilating a modest number of technical changes.

Technical changes originating from the UN 15th Revised Edition

All of these changes are clarifications of existing provisions and reflect existing practices; they are therefore seen as cost neutral for designs which have followed normal design good practice.

6.2.1.1.6 Most of the changes concerning bundle manifolds are clarifications of existing text and should have no impact on existing designs which in Europe has been covered by EN 13769:2003. The requirement for the manifold to withstand the cylinder test pressure, although new, is common sense and necessary for safety. Only inadequate existing designs not conforming to the EN should be affected.

6.2.1.3.1 A change to clarify meaning, but the previous text was unlikely to have been misinterpreted by designers of such equipment.

6.2.1.6.2 The new text for periodic inspection of acetylene cylinders only adds more detail to describe existing practice. Anyone following the referenced Standard EN 12863 will already be doing what is required.

6.2.2.2 The new note allows the ultimate tensile strength (UTS) of steel receptacles to be increased from 950 MPa specified in ISO 11114-1:1997 to 1100 MPa for UN 2203 silane. This is unlikely to affect Irish industry since this concession was made to suit USA practice. Europe is unlikely to take advantage of this change since the experts are still debating whether silane really does not cause hydrogen embrittlement. This change is matched by removing special packing provision 'd' from silane in P200 in 4.1.4.1.

Technical changes originating from ADR

The working group which undertook the rearrangement of Chapter 6.2 was lead by EIGA and its objectives were to leave the technical requirements of ADR unchanged. It was successful in this except for the issue of approval of alternatives to the hydraulic pressure test in periodic inspection. In ADR 2007 the "testing and certifying body approved by the competent authority of the country of approval" could approve the use of a pneumatic pressure test, ultrasonic inspection or acoustic emission. This requirement has not been carried forward and approval is now required from the competent authority itself because of Notes 1 and 2 in 6.2.1.6.1.

The costs of adapting to this change can be avoided if the Competent Authority exercises its prerogative of delegating the decision to the inspection bodies; this could be done in the new domestic legislation based on the 2009 ADR. Note that there is also a pending debate at the UN to remove the need for competent authority approval of ultrasonic inspection when carried out in accordance with the Standards ISO 6406:2006 and 10461:200 + A1:2006. If adopted, this will carry through into ADR for the 2011 edition.

Standards in Chapter 6.2

UN pressure receptacles: -

Standards for UN pressure receptacles have always been mandatory.

6.2.2.4 The following standards shall be mandatory after 30 June 2009 for UN gas cylinders.

ISO 6406:2005	Periodic inspection and testing of seamless steel gas cylinders
ISO 10461:2005 + A1:2006	Seamless aluminium - alloy gas cylinders - Periodic inspection and testing.
ISO 10462:2005	Cylinders for dissolved acetylene - Periodic inspection and maintenance

ADR pressure receptacles: -

In 2009 the Standards listed in 6.2.4 become mandatory for ADR pressure receptacles, but the use of ones which are newly listed in

2009 are optional until 1 January 2011. This means that the equivalent standard previously listed or the technical code, if no relevant standard existed, can continue to be used as a transitional measure until 31 December 2010. This transition has not been applied to the above standards listed in 6.2.2. Note that the six months transition usually applied at the start of each biennium does not apply to Standards since they have already been subject to two years transition.

New Standards are listed below, but for the most part they are evolutionary and have been written by industry to reflect advances in practice or technology which they wish to use. Therefore, no cost impositions are foreseen other than the normal adaptation to progress.

6.2.4 The table below summarises the changes in standards for ADR pressure receptacles.

New Standard optional until 1 January 2011	Replaces
EN 1442:2006 + A1:2008; LPG welded steel cylinders – design and construction	EN 1442:1998 + A2:2005
EN 1800:2006; Acetylene cylinders – Basic requirements, definitions and type testing	EN 1800:1998 + AC 1999
EN 14140:2003 + A1:2006; LPG welded steel cylinders – Alternative design and construction	EN 14140:2003
EN 14638-1:2006; Welded austenitic stainless steel cylinders made to a design justified by experimental methods	None
EN 14893:2008 + AC:2007; Transportable LPG welded steel pressure drums	None
EN 14876:2007; Periodic inspection and testing of welded steel pressure drums	None
EN 14912:2005; Inspection and maintenance of LPG cylinder valves at time of periodic inspection of cylinders	EN 14189:2003 *
EN 13152:2001 + A1:2003 Specifications and testing of LPG cylinder valves – Self closing †	EN 13152:2001
EN 13153:2001 + A1:2003 Specifications and testing of LPG cylinder valves – Manually operated †	EN 13153:2001
† Note that the above two amendments, although published in 2003, have only been accepted for reference this biennium, so they remain optional until 2011. The amendments contain only some minor clarifications and the extra testing required for service at – 40 °C, the impact on Ireland is negligible	

* Since this was a voluntary Standard written for industrial gases in general, it is unlikely that the LPG industry was following it.

ADR TANKS

Transfer of parts of TPED into ADR

ADR tanks, battery-vehicles and MEGCs for gases of Class 2, UN 1052 HYDROGEN FLUORIDE, ANHYDROUS and UN 1790 HYDROFLUORIC ACID with more than 85% hydrogen fluoride have been subject to TPED (Council Directive 1999/36/EC on Transportable Pressure Equipment (as amended)).

Parts of TPED have been transferred into the 2009 ADR creating a new conformity assessment system in 1.8.6 and 1.8.7. For details of these changes refer to the text dealing with 1.8.6 and 1.8.7 under Pressure Receptacles – Carriage of Gases.

In parallel with this, new Special Provisions TA4 and TT9 have been added to 6.8.4, and against all the gases in column (13) of Table A of Chapter 3.2 that can be carried in ADR tanks and against the entries for UN 1052 and UN 1790 listed above. This means that the conformity assessment procedures in 1.8.7 and for inspections and tests (including supervision of manufacture) the procedures in 1.8.7 must be applied by the competent authority, its delegate or inspection body conforming to 1.8.6.4 and accredited according to EN/ISO/EC 17020:2004 type A.

Similar to those in 1.6.2.7 for pressure receptacles, transitional arrangements have been added to 1.6.3.35 for tank vehicles (fixed tanks) and battery-vehicles and to 1.6.3.34 for tank-containers and MEGCs. This means that a Contracting Party to ADR need not apply the requirements of 1.8.6, 1.8.7 and TA4 and TT9 of 6.8.4 before 1 July 2011.

For an assessment of the likely impact of this new system, see comments relating to this issue in the previous section dealing with pressure receptacles – carriage of gases.

Provision for carriage in ADR tanks

Following the decision at UN level to provide for the transport in portable tanks of UN 2480, and as UN 2481 is already provided for, parallel provision has been made for the carriage of these isocyanates in ADR tanks. ADR tank codes and tank special provisions have been added in Columns (12) and (13) for UN 2480 and UN 2481 in line with the rationalized approach.

This represents a relaxation by providing a further option of carriage in tanks.

Partitions and surge plates

In Chapter 4.3, sub-paragraph 4.3.2.2.4 has been amended such that shells of tank-containers or of road tank vehicles intended for the carriage of not only liquids but also liquefied gases or refrigerated liquefied gases which are not divided by partitions or surge plates into sections of not more than 7500 litres capacity shall be filled to not less than 80% or not more than 20% of their capacity. An exemption has been made for two cryogenic liquids, UN 1963 Helium, refrigerated liquid and UN 1966 Hydrogen, refrigerated liquid. However, by transitional measure 1.6.4.33 and 1.6.3.34, notwithstanding these new provisions in 4.3.2.2.4, tank-containers or road tank vehicles intended for the carriage of liquefied gases or refrigerated liquefied gases, which meet the applicable construction requirements of ADR but which were divided, before 1 July 2009, by partitions or surge plates into sections of more than 7500 litres capacity may still be filled to more than 20% and less than 80% of their capacity.

Despite the definition of liquids in 1.2.1, some parts of industry had interpreted this provision as also applying to liquefied gases and refrigerated liquefied gases; thus they already comply with this new provision. For other sections of industry, this new provision will entail some extra cost in redesigning new tanks to be constructed from 1 July 2009. However the overall cost to these sections of industry is mitigated by the transitional measure which allows existing tanks to be used to the end of their natural life.

Use of Standards and technical codes

6.8.2.1.4 has been amended to refer to the fact that shells shall be designed and constructed in accordance with the Standards listed in 6.8.2.6, or of a technical code recognized by the competent authority in accordance with 6.8.2.7 (only where there is no relevant Standard).

Following the decision in the 2007 edition of ADR to make the use of a relevant Standard mandatory within 2 years, the texts of 6.8.2.6 dealing with Standards and 6.8.2.7 dealing with technical codes, have been amended accordingly.

Following the principle of a 2 year lead-in period, the use of new Standards, new editions of or amendments to existing Standards will only be mandatory 2 years after they are first referenced in 6.8.2.6. To explain this in a user friendly way all existing and new Standards are listed together with their mandatory date or period of application and when they may be applied on a voluntary basis.

An exception has been made in the case of EN 14025 and EN 13094 dealing with the design and construction of pressure and low pressure tanks respectively. The application of the 2008 edition of EN 14025 shall be mandatory from 1 July 2009. The application of the 2008 edition of EN 13094 is also likely to be mandatory from 1 July 2009. However as the new Standard will only be issued after the May 2008 meeting of WP.15 it should be referenced in an amendment to the 2009 edition of ADR for entry into force on 1 July 2009 following formal approval by the Joint Meeting in September 2008 and by WP.15 at its autumn session. Problems have been experienced with the use of the current editions and the consensus was that the updated Standards should be used as soon as practicable.

Text has been added in 6.8.2.6 to make it clear thatthe requirements in Chapter 6.8 shall take precedence in case of potential conflict between these and the requirements in a Standard. Where more than one Standard could be used, only one of them shall be applied and then in full, e.g. for the design and construction of tanks for LPG road tankers, either EN 12493 or EN 14025 can be used but not a combination of both. The new Standards that are listed include EN14432 and EN14433 respectively dealing with product discharge and air inlet valves, and foot valves for liquid chemicals, and the 2007 edition of EN 12972 dealing with testing, inspection and marking of metallic tanks and the 2008 edition of EN 12493.

The mandatory application of Standards from 2009 together with the principle of the 2 year lead in period was introduced in the 2007 edition ADR so industry has been forewarned of this change. Generally industry is supportive of the mandatory use of Standards as this represents a level playing field for the design and construction of tanks and building tanks to a common Standard facilitates sales to the rest of Europe. As such many have started using the Standards already on a voluntary basis. For those that have not, there will be new costs to move over to the new designs, particularly to those using ASME VIII to design and construct low pressure tanks.

Non-destructive testing (NDT) of welds - Coefficient lambda (λ)

The text in 6.8.2.1.23 dealing with the amount of non-destructive testing (NDT) of welds required during the construction of ADR tanks when the weld efficiency factor or welding coefficient lambda (λ) is 0□3, has been modified to align with the text in the Standards referred to in 6.8.2.7, EN 13094, EN 14025 and EN 12972, the construction Standards for low pressure and pressure tanks and for testing and inspection of tanks.

This may entail some new extra cost for those sectors of industry not already working to these Standards on a voluntary basis.

Items of equipment – Section 6.8.2.2

A new paragraph has been added to 6.8.2.2.1 which requires that piping on tanks must be designed, constructed and installed so as to avoid the risk of damage due to thermal expansion and contraction, mechanical shock and vibration. The amendment reflects the text of 6.7.2.5.8, 6.7.3.5.10, 6.7.4.5.10 and 6.7.5.3.4 that already apply this requirement to portable tanks and UN MEGCs.

This is likely to have little impact as it simply formalizes existing industry best practice.

Periodic and intermediate inspections and exceptional checks

In 6.8.2.4.2 and 6.8.2.4.3, the requirements for periodic and intermediate inspections and the interval between inspections have been clarified. Intermediate inspections may be performed at any time before and up to 3 months after the specified date. In addition text has been added to 6.8.2.4.4 to clarify that when an exceptional check has been carried out, it can be considered as a periodic or intermediate inspection if the requirements in 6.8.2.4.2 or 6.8.2.4.3 respectively have been fulfilled. In addition 6.8.3.4.6, which deals with the different periodic inspection periods for certain high hazard gases and for refrigerated liquefied gases, has been amended to reflect these changes.

This represents a pragmatic approach to the timing of these various inspections and allows industry more flexibility when these tanks need to taken out of service. It also avoids potential duplication of inspections when an exceptional check is needed to be carried out, e.g. after damage or repair to the tank.

Results of tests – Certificates and marking

Following amendments to 6.8.2.4.5 and 6.8.3.4.16, certificates showing the results of tests, inspections and checks will now need to be issued even in the case of negative results. This is to counter the so-called “tank tourism”.

In addition to showing the appropriate tank codes, the related alphanumeric codes of special provisions will need to be included on the certificates.

A new requirement has been added in 6.8.2.5.1 for road tank vehicles and tank-containers to mark the tank plate with the symbol “S” when the shells or compartments are divided by surge plates into sections of not more than 7,500 litres capacity. By transitional measures, where the shell of a tank-container (see 1.6.4.32) or road tank vehicle (see 1.6.3.33) was already divided by partitions or surge plates into sections of not more than 7500 litres capacity before 1 January 2009, the capacity of the shell need not be supplemented with the symbol “S” until the next periodic inspection according to 6.8.2.4.2 is performed.

Road tank-vehicles – Chapter 6.8

Following amendments to the table of acceptable Standards in 6.8.2.6 which inter alia would no longer permit the use of EN 13317: 2002 for manhole cover assemblies, a new transitional measure has been introduced in 1.6.3.32, Tank-vehicles and demountable tanks constructed before 1 July 2007 in accordance with the requirements in force up to 31 December 2006, equipped with manhole cover assemblies in accordance with EN 13317:2002 applicable until 31 December 2006, including those of the figure and table B.2 of annex B of that Standard which are no longer acceptable as from 1 January 2007, or the material of which does not meet the requirements of EN 13094:2004, paragraph 5.2, may still be used. This transitional measure was agreed in light of the change in 6.8.2.6 since otherwise many petroleum road tank-vehicles operating in Ireland would no longer be able to be used.

6.8.3.6 has been expanded and now requires the mandatory application of the Standard listed (EN 13807:2003) to the design and construction of battery-vehicles and MEGCs from 1 January 2009.

Special requirements applicable to tanks for Class 2 – Section 6.8.3

Paragraph 6.8.3.2.11 relating to tanks for refrigerated liquefied gases has been amended with a new paragraph at the end exempting vacuum-insulated tanks from the requirements of 6.8.2.1.7 for the protection of shells against the risk of deformation.

There will be no impact in Ireland as industry already interprets the regulations this way.

Vacuum tanks - Chapter 6.10

An amendment has been made to the construction requirements in 6.10.3.7(a), for suction booms fitted to vacuum-operated waste tanks to provide for an alternative design and the possibility of fitting a rotating crown wheel between the shell and the (external) stop-valve.

This type of construction has been used in several countries (see multilateral agreement M 134). It is understood that this system has not been used in Ireland but provides the possibility of greater flexibility for future designs.

Provisions concerning carriage in tanks – Chapter 7.4 and Approval of Vehicles – Chapter 9.1

7.4.1 has been amended by replacing the reference to “tank-vehicles, battery-vehicles or vehicles carrying tank-containers or portable tanks” by a reference to “rigid vehicles, drawing vehicles, trailers or semi-trailers”.

Similarly the explanatory note for column (14) in 3.2.1 has been amended to indicate that the reference to vehicle includes the drawing vehicle of trailers or semi-trailers.

These amendments clarify that the requirements for vehicles subject to approval apply both to drawing vehicles and to trailers and semi-trailers, except for the cases indicated in special provision V2(2) of 7.2.4.

As a consequence the following text has been deleted from the first paragraph of 9.1.2.3 regarding the annual technical inspection "; if these vehicles are trailers or semi-trailers coupled behind a drawing vehicle, the drawing vehicle shall be subject to technical inspection for the same purposes."