

**EXPLANATORY MEMORANDUM TO
THE PACKAGING (ESSENTIAL REQUIREMENTS) (AMENDMENT)
REGULATIONS 2009**

SI 2009 No. 1504

1. This explanatory memorandum has been prepared by the Department for Business, Innovation and Skills and is laid before the House of Commons by Command of Her Majesty.

2. **Purpose of the instrument**

2.1 This instrument amends the Packaging (Essential Requirements) Regulations 2003 (“the 2003 Regulations”) to continue an exemption regarding heavy metal concentration levels in plastic crates and pallets.

3. **Matters of special interest to the Joint Committee on Statutory Instruments or the Select Committee on Statutory Instruments**

3.1 None

4. **Legislative Context**

This instrument is being made to give effect to the Commission Decision of 24 March 2009 (2009/292/EC) (OJ L79/44) (“the Commission Decision”), establishing the conditions for a derogation for plastic crates and plastic pallets in relation to the heavy metal concentration levels established in Directive 94/62/EC of the European Parliament and of the Council on packaging and packaging waste, (notified under document number C (2009)1959) (“the Directive”).

The Directive is designed to minimise the creation of packaging waste material and to promote recovery, re-use and recycling of packaging in the EU. The Directive has both single market and environmental goals, setting “essential requirements” which packaging must meet to be placed on the EU market. This includes limits on heavy metals in packaging (these are Cadmium, Mercury, Lead and Hexavalent Chromium which may not exceed 100 ppm by weight on/after 30 June 2001). The Directive was transposed by the 2003 Regulations.

Commission Decision 1999/177/EC made under Article 11(3) of the Directive established the conditions for a time limited derogation for plastic crates and pallets regarding the heavy metal concentration limits which expired on 4 March 2009. This derogation was introduced because a considerable amount of plastic crates and pallets containing heavy metals, whose concentration levels exceeded those allowed by the Directive, were still on the market. It was felt that industry lacked the capacity to replace all of these plastic crates & pallets and there was a high risk that they might be disposed of via land fill or incineration, with harmful affects on health and the environment. An extension

of the derogation would allow Industry time to replace these plastic pallets, using the best available techniques.

In 2008, the derogation was reviewed by the Commission and, following scientific reports, the Commission have issued a further derogation without a time limit. The Commission propose to review the functioning of the system, and the progress made, in phasing out these plastic crates and pallets containing heavy metals, after 5 years.

This amendment to the 2003 Regulations simply removes the time limit to the derogation and does not introduce any new administrative burdens or new obligations on Business.

Because the Commission Decision was made after the expiry of the present derogation and an amendment to the 2003 Regulations cannot have retrospective effect a provision has been included to ensure that no proceedings or enforcement action shall be taken in respect of a breach of regulation 6(1) of the 2003 Regulations between the 4th March and the coming into force of these regulations provided the requirements set out in regulation 6(3)(a) and Schedule II to the 2003 Regulations were complied with.

5. Territorial Extent and Application

5.1 This instrument applies to all of the United Kingdom.

6. European Convention on Human Rights

6.1 As the instrument is subject to negative resolution procedure and does not amend primary legislation, no statement is required.

7. Policy background

7.1 This instrument is necessary to give effect to the Commission Decision so that the expiry date of 4 March 2009, for the derogation for plastic crates and pallets regarding the heavy metal concentration limits, is removed.

7.2 The Department does not intend to consolidate the Packaging (Essential Requirements) Regulations 2003.

8. Consultation outcome

8.1 No new consultation has been considered necessary because of the nature of the amendment.

9. Guidance

9.1 BERR Government Guidance Notes are available on the 2003 Regulations, dated December 2008 (URN 08/1177) and will be updated to reflect the changes to the Regulations.

10. Impact

10.1 There is no new impact on business, charities or voluntary bodies and this change represents business as usual.

10.2 The impact on the public sector is negligible and this change represents business as usual.

10.3 A Regulatory Impact Assessment prepared in August 2000 for the derogation for plastic crates and plastic pallets in relation to heavy metal concentration levels, is attached to this memorandum and remains relevant, given that the extension of the derogation time limit does not introduce any additional impacts on businesses.

10.4 A summary of the European Commission's DG ENV scientific report dated 17 September 2008 is attached to this memorandum, which supports this decision.

11. Regulating small business

11.1 The legislation applies to small businesses.

11.2 This is helpful to business and especially smaller businesses, as the extended derogation (ref OJ L79/44) will continue to minimise the impact of the requirements on firms employing fewer than 20 people. It will give smaller businesses time to consider, adapt and source more eco friendly and hopefully cheaper replacement materials, enabling them to phase out plastic crates and pallets containing heavy metals, before the Commission's review in 5 years. The UK Government will play its part in actively working with industry to achieve alternatives.

11.3 Rationale: this derogation was reviewed by the Commission in December 2008 and scientific reports were submitted to them, recommending that the current derogation should be continued, with the recommendation that the Commission review the functioning of the system and the progress made in phasing out these plastic crates and pallets containing heavy metals after 5 years.

12. Monitoring & review

12.1 This regulation has resulted from a Commission Decision to remove the time limit on their derogation on heavy metals in plastic crates and pallets. The Commission intend to review the functioning of the system and the progress made in phasing out plastic crates and pallets containing heavy metals in 5 years.

13. Contact

Anne Turner at the Department for Business, Innovation and Skills Tel: 020 7215 0995 or email: anne.s.turner@berr.gsi.gov.uk can answer any queries regarding the instrument.

Annex RIA for plastic crate and plastic pallet derogation

REGULATORY IMPACT ASSESSMENT.

1. DEROGATION FOR PLASTIC CRATES AND PLASTIC PALLETS IN RELATION TO HEAVY METAL CONCENTRATION LEVELS.

2.i) Issue and Objective.

The Derogation establishes the conditions under which plastic crates and plastic pallets are exempted for a period of ten years from Article 11 of the 1994 EC Directive on Packaging and Packaging Waste, which places heavy metals concentration limits on packaging components. Compliance with this Article may impose costs on business users/owners of plastic crates and plastic pallets and may create a disincentive to recycle.

2.ii) Risk Assessment.

Article 11 would force owners of plastic crates and plastic pallets to dispose of (or recycle into non-packaging products) approximately 30% of the 50m existing plastic crates and 20% of the existing 1.5m plastic pallets when these items reach the end of their life. These would then have to be replaced with new crates and pallets made from virgin plastic (or from recycled plastic which contained less than the maximum heavy metals content, assuming this could be identified). This would lead to higher disposal and replacement costs on business. This higher disposal of plastic crates and plastic pallets containing heavy metals may have a greater adverse environmental impact both in terms of volume and heavy metals content, though the impact is uncertain. The replacement of crates and pallets, where manufactured from virgin plastic, will increase resource consumption.

The Derogation will lessen these impacts and also assist the achievement of the EC Packaging and Packaging Waste Directive's recycling targets by allowing plastic crate and plastic pallet recycling more readily to take place.

3.i) Options.

The Derogation is voluntary and will last ten years from the date of entry into force. It will allow plastic crates and plastic pallets to exceed heavy metals limits if they are produced within a controlled recycling process. This process requires that:

- the recycled material originates solely from plastic crates and plastic pallets;
- a maximum of 20% virgin material is added to the recycling process; and
- none of the designated heavy metals may be added intentionally.

Plastic crates and plastic pallets produced under this derogation must also be introduced into a controlled system in which:

- all plastic crates and plastic pallets must be marked permanently and visibly;

- a system of record-keeping and inventory is established;
- a minimum of 90% of plastic crates and plastic pallets are returned over their lifetime; and
- an annual declaration of conformity is drawn up and kept available for four years.

Two options have been identified. Firstly, plastic crates and plastic pallets are subject to Article 11. Secondly, plastic crates and plastic pallets are exempt from the requirements of this Article under the Derogation. Firms can choose to take advantage of the Derogation or abide by the Article 11 heavy metal concentration limits. Neither route is, however, costless.

3.ii) Issues of Equity and Fairness.

Exempting plastic crates and plastic pallets may cause inequity amongst converters, some of whom have incurred costs in reducing the heavy metal content of their products, and amongst packer/fillers, some of whom no longer use packaging containing heavy metals.

4.i) Benefits.

Option 1: The benefit from plastic crates and plastic pallets being subject to Article 11 would be a more rapid reduction in heavy metals from the recycling chain. Thus any future recycling or disposal of these products would run less of a possible health or environmental risk from heavy metals.

Option 2 : The Derogation, in exempting plastic crates and plastic pallets, means that new plastic crates and plastic pallets can be manufactured from recycled ones, thus potentially reducing the demand for virgin plastic. Also fewer plastic crates and plastic pallets will need to be landfilled. Any adverse environmental impacts from virgin plastic production and landfilling will thus be reduced. In addition to which, the cost to business will be less and the ease of the UK meeting its packaging recycling targets will be greater.

4.ii) Quantifying and Valuing the Benefits.

Option 1 : Since the benefit of removing heavy metals from recycled plastic crates and plastic pallets is uncertain, as is the environmental impact of the increased disposal of plastic crates and plastic pallets containing heavy metals, the quantification and valuation of the environmental benefits of Option 1 is not possible. Each year, on average, some 2,000 tonnes of waste plastic crates and plastic pallets potentially containing heavy metals (ie non-food crates and pallets) would be disposed of, rather than recycled (recycling would allow heavy metals above 100 ppm to remain in the recycle).

Option 2 : Higher recycling rates can have environmental benefits although these are not quantifiable and easing the UK's compliance with its recycling targets will reduce costs to business. In terms of quantifiable costs, the benefits of Option 2 are primarily the avoidance of costs incurred under Option 1.

Industry estimates of the size of the markets and costs vary considerably. However, broadly speaking it is estimated that there are some 50 million plastic crates currently in use, each lasting an average of 15 years and with an average weight of 1.5 kg. The cost of disposal is approximately £50 per tonne. Only about 30% of plastic crates in circulation are for non-food

use; it is assumed that it is these plastic crates which are most likely to contain heavy metals, given the stringent controls over packaging which comes into contact with food. On this basis, in each year some 1m crates (50m/15 x 30%) are affected by Article 11. This equates to 1,500 tonnes. The cost of disposal of this tonnage, as under Article 11 it could not be recycled into new plastic crates or plastic pallets, is **£75,000** pa. This does not reflect any lost revenue from not being able to sell the plastic waste to reprocessors and as such may be an underestimate of the cost.

In terms of replacing these plastic crates, it is assumed that the heavy metals limit requires virgin plastic to be used. Whilst different for each plastic, an upper estimate of the price differential for plastic crate manufacture between virgin and recycled plastic is some £50 per tonne. It is also assumed that the plastic crates are replaced one for one (ie the market is not contracting). Thus the cost of replacing the old plastic crates is up to some **£75,000** pa. These estimates also assume that it is possible cost effectively to separate out for disposal the plastic crates which contain heavy metals of more than 100ppm; if this is not possible the disposal and replacement costs together rise to £0.5m pa.

There are estimated to be some 1.5m plastic pallets in circulation, each lasting on average 10 years and with an average weight of 20 kg. Some 20% of these are estimated to be for non-food use. On this basis, in each year some 30,000 pallets (1.5m/10 x 20%) are affected by Article 11. This equates to 600 tonnes. The cost of their disposal is **£30,000** pa. The upper estimate of the price of virgin over recycle for plastic pallet manufacture is £150 per tonne and thus the cost of the plastic pallet replacement is up to **£90,000** pa. If the separation of plastic pallets containing more than the limit of heavy metals is not possible and all plastic pallets are disposed of, the costs of disposal and replacement together rise to £0.6m pa.

On these assumptions, the total cost of disposing of, and replacing, plastic crates and plastic pallets under Article 11 is estimated to range between **£270,000** (assuming a £50 per tonne price differential between virgin and recycled plastic for crates and £150 per tonne price differential for plastic pallets) and **£1.1m** pa. If the price differential between virgin and recycled plastic falls to zero, these costs would fall to £0.1m-£0.4m pa. Costs of Option 1 would continue until the heavy metals content of the plastic crate and plastic pallet feedstock falls to the Directive's limit. The avoidance of these costs is the overall monetary benefit of the Derogation (Option 2).

5.i) Business Sectors Affected.

Using Office for National Statistics data and the Standard Industrial Classification (SIC), there are 560 manufacturers of plastic packing goods (SIC code 25220). Also affected are recyclers of non-metal waste and scrap (SIC code 37200), of which there are 355 firms. Industry estimates that there are 10 manufacturers and importers of plastic crates and 8 major plastic pallet manufacturers and importers. Plastic crates and plastic pallets are often hired out to the users, this hiring comes under activities of "other transport agencies" (SIC code 63400), of which there are 4,175 companies. A wide range of industries use plastic pallets and plastic crates. These firms will also be affected as they may be responsible for the disposal of their old plastic crates and plastic pallets and as the price they are charged for the purchase or hire of plastic crates/pallets may alter. Users of these products range from supermarkets - which use crates to store fruit/vegetables and bread - to the automotive industry which uses pallets for moving heavy parts.

5.ii) Compliance costs for a 'typical' business.

Option 1, compliance with Article 11, imposes costs on businesses, as outlined in 4.ii above (ie the Option 2 benefits are the Option 1 costs).

Option 2 removes these costs, but imposes other costs on businesses. Companies will face costs from: changes in the production process where necessary to meet the 20% maximum virgin content limit; the establishment of a closed loop system; the identification of products; information collation and storage; writing a declaration of compliance; and having inspections to check that the requirements are being met.

Plastic Crate Manufacturer

A large plastic crate manufacturer was contacted. They manufacture 3-4m plastic crates pa, but employ fewer than 500 people.

There was thought to be no problem meeting the 20% maximum virgin content limit, although there are quality and colour issues which might affect some applications, but these could not be quantified. Recycled material and virgin are a similar price at present (though this varies), thus Article 11 potentially requiring the use of virgin plastic would not impose significant additional input costs. Placing an identifying mark on their products was considered to have very low costs. The cost of collating information, writing the declaration and having an inspection by a monitoring agency was estimated to be under £200 per annum.

The cost of establishing a closed loop system was uncertain, but an estimate of £250-£300 per tonne was made. Their manufacture is, however, now heavy metals-free, thus they comply with the Article 11 heavy metals limits.

Plastic Pallet Manufacturer

A large plastic product manufacturer, whose range includes plastic pallets, was contacted. The 20% maximum virgin content limit was thought, possibly, to raise issues for some manufacturers/users. There is little difference between the price of virgin plastic and recycled plastic, although swapping between using virgin and recycled feedstock may require changes to existing equipment, but these costs were unquantified. All plastic pallets are in a closed loop and therefore no additional costs would be incurred in this area. The placing of an identifying mark on the products was considered to be relatively inexpensive.

5.iii) Total Compliance Costs

Option 1 : £270,000 to £1.1m, as set out above.

Option 2 : Industry noted that plastic pallets tended already to be in closed loops and that between 70% and 100% of plastic crates were also in closed loops. The cost of operating a closed loop is estimated to be some £250-300 per tonne. Assuming that: only new plastic crates made from recycled plastic crates/pallets need to be included; plastic crates last about 15 years; an average of 15% of plastic crates are not in a closed loop; and 30% of that 15% contain heavy metals - the cost of a closed loop system per annum might be some **£60,000** (ie $50m/15 \times 30\% \times 15\% \times 0.0015 \text{ tonnes} \times £275$). Over the 10 years as more new plastic crates are introduced to the

closed loops the annual cost will rise, arguably to an average of £330,000 - although as economies of scale are gained this will fall.

Industry indicated that the 20% ceiling for virgin plastic content was unlikely to be a significant issue, although there might be quality and colouring problems for some applications and there might be some need to replace capital equipment. The cost of putting a mark identifying the plastic crates and plastic pallets was considered by industry to be insignificant or zero. Whilst the cost of storing information is assumed to be zero, the cost of data collation and writing the declaration of compliance is estimated to be some **£1,000**. This uses the New Earnings Survey and assumes that it takes 2 hours of a clerical worker's time to recover the information, 1 hour of a senior manager's time to write the declaration and that there are 15 plastic pallet manufacturers and 10 plastic crate manufacturers. The cost of a 3 hour inspection of compliance (involving a clerical worker and a technical manager) for the 25 firms is estimated to be **£2,000**.

On this basis, the cost of compliance with the Derogation is estimated to be £63,000 pa, though this may be an underestimate of the on-going annual costs.

6. Consultation with Small Business: 'The Litmus Test.'

A small plastic manufacturer which produces a range of products including plastic pallets was contacted. The cost of disposal was at the upper end of the industry estimates, thus the cost of complying with Article 11 is greater and so the benefits of the Derogation are greater also. The maximum virgin content level was considered achievable although quality issues may need to be addressed. The cost of placing an identifying mark on the plastic pallets was considered insignificant. It was believed that all plastic pallets are already in a closed loop and that a 90% return rate is possible, thus no additional costs in this area would be incurred.

7. Other Costs.

There may be monitoring costs associated with the Derogation requirements. Assuming £47.10 per hour for 3 hours per inspection (including preparation and travelling), the cost to the enforcement agency will be £141.30 per firm visited.

There will also be costs incurred by central government in putting the regulations in place.

8. Results of Consultation.

A number of firms, both large and small, were contacted and information concerning the costs and benefits of the Derogation acquired.

9. Summary and Recommendations.

The Derogation is a deregulatory, voluntary option, though not costless. Its benefits arise through manufacturers and owners of plastic crates and plastic pallets avoiding costs associated with complying with Article 11. In addition, it facilitates recycling and is also consistent with the search for more cost effective ways to meet the recycling targets in the Packaging and Packaging Waste Directive.

The cost of Article 11 of replacing and disposing of plastic crates and plastic pallets is estimated to be £270,000-£1.1m pa. This is the monetary benefit of the Derogation.

However, the Derogation imposes costs on firms. The quantifiable cost of compliance is £63,000 pa, although this may be an underestimate of the annual costs over the ten year period. The environmental costs and benefits are uncertain and hence unquantifiable.

There are also likely to be some public sector costs incurred through implementing and monitoring the Derogation.

10. Enforcement, Sanctions, Monitoring and Review.

The operation of the Derogation will be monitored on an on-going basis. The Derogation will end in 9 years time, though there will be a review in 7 years time with a view to a possible extension.

11. Contact Point.

Sally Williams
EPTAC3b
Department of Trade and Industry
Bay 425
151 Buckingham Palace Road
LONDON
SW1W 9SS

August 2000



European Commission DG ENV

**A project under the Framework contract
G.4/FRA/2007/0067**

**STUDY TO ANALYSE THE DEROGATION
REQUEST ON THE USE OF HEAVY
METALS IN PLASTIC CRATES AND
PLASTIC PALLETS**

**Draft Final Report, v.4
September 17, 2008**

This page is left intentionally blank

3. SUMMARY AND CONCLUSIONS

3.1. SUMMARY

Based on the available information and evidence the use and appropriate recycling and re-manufacturing processes of plastic crates and pallets containing heavy metals would seem to have negligible health and environmental impacts. The weathering effect, which may be relevant in case of granulated material left outside for years, as discussed in the context of landfilling, does not seem to be of relevance for whole crates and pallets in normal use and recycling. Furthermore, when crates and pallets are remanufactured, UV-protector is added to guarantee the resistance of the colour. This also protects the crates and pallets from weathering effect and further reduces the risk of leaching. Most of the contacted stakeholders, including non-industrial experts, agree that keeping the heavy metals in these applications may just be the best option.

Based on the available information, it can be concluded that at present there are no full scale techniques, nor available facilities to extract heavy metals from plastic crates and pallets, conserving the plastic matrix for further use. The developers of the chemical recycling processes in the Netherlands claim that their processes are applicable in large scale and need only investment in a production unit to become operational. However, it is difficult to judge these claims. In the current legal situation there is no interest to make such investments.

If the derogation is not extended, up to 2.5 million tons of heavy metal containing plastic would most probably have to be landfilled or incinerated. In both cases, there seems to be a risk of heavy metals leaching to an environment either directly from granulated/chipped plastic or from landfilled ashes, unless both of these fractions are properly treated as hazardous waste. Furthermore, this would mean that 2.5 million tons of virgin plastics with higher CO₂ emission would be needed to replace the old crates.

Regarding economic impacts, it has been illustrated that due to the structure of the one of the most concerned sectors, beverage manufacturing, the end of the derogation could have disproportionate impacts on a large number of SME. Further, considering the current, installed RTP production capacity in Europe, a sudden end of the derogation would seem to lead to serious supply problems.

Based on the negligible health and environmental impacts of the current situation, the possible risks related to the available disposal options, as well as the economic arguments, national authorities in Austria, Germany and UK support prolongation of the derogation. Positions of other Member States are unknown to the study contractors.

3.2. CONCLUSIONS

Considering that:

- the objective of the Packaging Directive is to prevent any impact of packaging and packaging waste on the environment or to reduce such impact, thus providing a high level of environmental protection, the elimination of heavy metals from plastic crates and pallets should be aimed at;
- the non-prolongation of the derogation would have disproportionate, negative economic impacts on many SMEs and would be likely to lead to supply problems; and that
- technologies exist to extract heavy metals from the plastic matrix, enabling the recovery of the plastic, and that the further up-scaling and development of these technologies is hampered by the lack of incentives to invest under the current derogation,

it is recommended to prolong the derogation for plastic crates and plastic pallets, but only for a limited period (e.g. for another 10 years) during which the industry should progressively eliminate the heavy metals from their crates and pallets using best available techniques to extract heavy metals from the plastic matrix. It would seem important to give an incentive to recycle the crates and pallets chemically, thus preserving the plastic material. Otherwise the plastic crates and pallets will most likely be incinerated (or still landfilled in some Member States) as hazardous waste.