

**Container Design and Performance Guidelines
for Liquid Animal Health and Crop Protection Products - 2006**



Characteristic		5L ¹ plastic container	10L plastic container	20L plastic container	20L steel container
Basic Requirements	Products must be registered by the APVMA.	✓	✓	✓	✓
	Dangerous goods containers must meet the requirements of the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code, 6 th edition).	✓	✓	✓	✓
Packaging material	Must comply with requirements in the Standard for the Uniform Scheduling of Drugs and Poisons to avoid confusion with food or drink packaging.	✓	✓	✓	✓
	Must comply with APVMA Guidelines and Codes of Practice for packaging and labelling.	✓	✓	✓	✓
	Quality and specifications should be in accordance with AS 2767-1994 and AS 2905-1986.	✓	✓	✓	✓
	When tested in accordance with AS 2216-1997 Appendix D, containers should not fall over.	✓	✓	✓	✓
	Containers shall pass the leak proof test specified in the Packaging Section of the ADG Code. Where the product is not a dangerous good, containers shall comply with the leak proof requirements for Packaging Group III Liquids in the Packaging Section of the ADG Code.	✓	✓	✓	✓
	Containers designed to carry dangerous goods shall meet the packaging performance and specification markings outlined in the ADG Code.	✓	✓	✓	✓
	Plastic containers must be identified in accordance with the PACIA Code of Practice - Plastics Coding System	✓	✓	✓	
	Containers should have no sharp edges or projections on the containers or closures.	✓	✓	✓	✓
Where practical, packaging for non-dangerous goods (except small animal health packs in the mainstream consumer market) should meet the performance testing requirements of the ADG Code or equivalent.	✓	✓	✓	✓	
Migration	Packs that meet the Agsafe Cleanliness Standard are classified as non-hazardous waste.	✓	✓	✓	✓
	Migration of active ingredients into the walls of containers should be less than 0.1% of active ingredient. ²	✓	✓	✓	
	Must be inert to contents and must comply with APVMA Packaging and Storage Stability Guidelines. The maximum rate of weight loss shall be less than 0.25 ml/h/1 water capacity in a permeability test.	✓	✓	✓	✓
Pack weight	Where practical for packs other than those that contain S7 or S6 poisons, packs should not exceed 25kg.			✓	✓
	Packs containing S7 poisons must not exceed 16kg.			✓	✓
	Packs containing S6 poisons should not exceed 16kg unless it can be shown that spillage is at or below acceptable level. ³			✓	✓

Footnotes

¹ Containers less than 5L have not been considered as part of this review as they are not deemed to be a major contributor to waste from non-returns.

² This is the maximum level to be non-hazardous in European Waste Catalogue.

³ Regulation 18 of the Agvet Code 1994 states that all or part of the contents of containers must be removed or discharged in such a way that, with the exercise of no more than reasonable care, the contents cannot harm any person nor have an unintended effect that is harmful to the environment.

Key

 indicates regulatory requirement.



indicates relevant for containers of that size and material.

Blank column

indicates that the characteristic is not relevant for that type of container.

Characteristic		5L plastic container	10L plastic container	20L plastic container	20L steel container
All closures, caps, lids	Closures must be leak-proof and must pass the leak proof and pressure tests specified in the Packaging Section of the ADG Code.	✓	✓	✓	✓
	Where the product is not a dangerous good, containers shall comply with the leak proof requirements for Packaging Group III Liquids in the Packaging Section of the ADG Code.	✓	✓	✓	✓
	Re-closures should be safe and liquid-tight.	✓	✓	✓	✓
	Closures should be removable with gloved hands, using tools where appropriate.	✓	✓	✓	✓
	Closures should be difficult for children to open.	✓	✓	✓	✓
Security	Should be tamper evident.	✓	✓	✓	✓
Opening position	Opening position should be as close to the rim as possible.				✓
Opening (aperture) size for crop chemical containers	Openings of 63mm thread outside diameter (TOD) will assist draining of containers and reduce glugging when pouring.	✓	✓		
	If a single cap, openings should be 63mm TOD.			✓	
	If containers have two openings, one opening should be at least 58mm TOD to assist draining of containers and pouring without glugging.			✓	
	Openings of wider than 56mm TOD will assist with the complete draining of containers and pourability.				✓
Neck	Incorporation of a raised, moulded or formed neck assists pouring.	✓	✓	✓	✓
Handles	Handles must be able to withstand reasonable force and not leak. They must comply with testing requirements for handle strength and serviceability AS 2216 Appendix C.	✓	✓	✓	✓
	Handles, accessible by a gloved hand, must be provided for rigid packs.	✓	✓	✓	✓
	Plastic containers for S6 and S7 poisons should be provided with a handle on the top and a recess in the base.		✓	✓	
	The steel rim provides some grip at the base of containers.				✓
	Handles must be easily gripped when wet.	✓	✓	✓	✓
	Handles should not flex excessively.		✓	✓	✓
	Inclusion of a rigid east west handle allows better pouring control.		✓ Excluding 10L jug	✓	✓
	Handles need to be large enough to be held with a gloved hand.	✓	✓	✓	✓
If hollow handles are included, the registrant should provide specific instructions on correct rinsing procedures to ensure 99.99% of the active is removed when triple or pressure rinsed	✓	✓	✓	✓	

Characteristic		5L plastic container	10L plastic container	20L plastic container	20L steel container
Anti-glugging device	Containers should prevent glugging through their design or include an anti-glugging device or be capable of using an externally fitting device.	✓	✓	✓	✓
	Dual caps reduce splash when pouring.			✓	✓
Drainage after triple rinsing or pressure cleaning	Containers should allow draining of a minimum of 98% of the volume when inverted with the minimum of shaking and 99.99% drainage of the active constituent after triple rinsing/pressure cleaning.	✓	✓	✓	✓
Label indelibility	Legend shall remain indelible when tested in accordance with AS 2581 Appendix C.	✓	✓	✓	✓
Label light fastness	Legend on containers shall achieve a Blue Wool Scale rating of 8 when tested in accordance with AS 2581 Appendix D. This standard should be applied to the product name, company name, directions for use, safety instructions and precautions, batch number, date of manufacture and expiry date as required ⁴ .	✓	✓	✓	✓
Label abrasion resistance	Labels shall not show any scuff marks or scoring of the printed test specimen or any ink/colour transfer when tested in accordance with AS 2581 Appendix E.	✓	✓	✓	✓
Label adhesion	The adhesion of the label stock will be determined by the method set out in AS 2666 Appendix E Resistance to Shear (holding power) when label stock is tested in accordance with AS 2776 Appendix G and AS 2668 Appendix G the shear value shall be 100 hours.	✓	✓	✓	✓
Secondary labels	Batch number, expiry date and date of manufacture (as appropriate) should be applied to the primary label. If a secondary label is applied for this purpose, it should be printed in a fashion and on materials that should last the life of the product.	✓	✓	✓	✓
Waterproof labels	Labels should be sufficiently waterproof to resist damage when wet.	✓	✓	✓	✓
Information on label⁵	Must comply with the provisions of the ADG Code and the APVMA Code of Practice for Labelling.	✓	✓	✓	✓
	Batch number, date of manufacture and expiry date must be clearly visible for the expected life of a product. ⁶	✓	✓	✓	✓

Footnotes

⁴ Animal Health products do not require date of manufacture but should include expiry date.

⁵ Check specific requirements for each product.

⁶ For non-dated products, the minimum storage period (life) is deemed to be 2 years from date of manufacture

These container design and performance guidelines have been developed to help companies involved in the plant science and animal health industries comply with relevant Australian packaging and occupational health and safety regulations. They also highlight desirable container characteristics that could be incorporated as part of company continuous improvement packaging programs.

These guidelines for 5 – 20 litre plastic and steel containers have been developed in order to support:

- compliance with container design and performance regulations
- provision of critical label information to users
- cleaning and rinsing of containers to standards acceptable to **drumMUSTER**
- recycling of containers and reuse of the recycled plastic and steel
- achievement of the Industry Waste Reduction Agreement goals.

They also incorporate characteristics that will assist companies meet user expectations for ease of handling, pouring, splashback and rinsing.

When deciding whether to register a product, the Australian Pesticide and Veterinary Medicines Authority (APVMA) must consider the specifications of the product container. Registrants must comply with the requirements of: the *Agvet Code*, *Guidelines for Registering Agricultural Chemicals*; and *Guidelines for the Generation of Storage Stability Data of Agricultural Chemical Products*.

Crop protection and animal health products play a vital role in the growth of safe, high quality and affordable food and fibre. Packaging plays a central role in safely delivering these products to users. Continuously improving packaging is part of CropLife Australia and Animal Health Alliance (Australia) member companies' commitment to product stewardship throughout the life-cycle of industry products. These guidelines complement the other industry stewardship programs: **drumMUSTER**, Agsafe Guardian programs for personnel and premises accreditation, and ChemClear®.

For further information about the plant science and animal health industries visit:

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