accord
hygiene, cosmetic & specialty products industry

ACCORD PHOSPHORUS STANDARD

FOR PHOSPHORUS CONTENT AND LABELLING OF HOUSEHOLD LAUNDRY DETERGENTS

May 2013

Foreword

The Australian Chemical Specialties Manufacturers Association (ACSMA) released the Scheme for Phosphorus Content and Labelling of Detergents in 1994. The association changed its name to the Australian Consumer and Specialty Products Association (ACSPA) in 2001 to better reflect its consumer focus and specialty products emphasis. In 2002 the Phosphorus Scheme was updated to take into account the change in Association name and contact information. In April 2005, there was another name change to ACCORD Australasia, and in that same year the association became the advocate for the consumer, cosmetic, hygiene and specialty products industry.

The Phosphorus Scheme was developed as the laundry industry's contribution to protecting Australian waterways. The NSW Government supported the acceptance of the industry national standard when the Phosphorus Scheme was initiated in 1994.

In the years since it has been in place, and across the changes in the association administering the scheme, there has been no change in the content or guidelines of the Scheme. Now, as a result of changes over time in the formulations of laundry detergents, and to reflect the broader stewardship initiatives of the laundry detergent industry, the Scheme has been revised.

This Accord Phosphorus Standard ('the Standard') establishes sector wide benchmarks for phosphorus content. The Standard is voluntary. Products which meet the requirements of the Standard are identified by logos which indicate phosphorus levels and are a clear indicator to consumers wishing to take this factor into account when they make a purchasing decision. Manufacturers need to apply to Accord for a licence to use the relevant logo on any of their laundry detergents and the licence will only be granted for use on products that meet the requirements of the Standard.

The Standard provides tangible evidence of the laundry detergent sector's commitment to protection of the environment in general, and Australia's precious waterways in particular.

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1. Introduction

Accord Australasia Limited is the peak national industry association that represents the manufacturers and marketers of formulated consumer, cosmetic, hygiene and specialty products, their raw material suppliers, and service providers.

Consumer & specialty products play an important part in the everyday lives of consumers as well as in major industries such as mining, medical institutions, schools and hotels.

Consumers benefit from the use of practical products such as soaps, shampoos and household detergents while the whole community gains from improved hygiene, cleanliness and efficiency.

Laundry detergents are the focus of this document. References in this document to detergents mean household laundry detergents. Accord has approximately 100 members. Those involved in manufacture and marketing of domestic laundry detergents represent over 90% of the supply of laundry detergents to the Australian market and include:

- Amway of Australia
- Colgate-Palmolive Pty Ltd
- Jalco Group
- Kao (Australia) Marketing
- PZ Cussons
- Unilever Australasia

Laundry detergents contain a range of ingredients, some of which may be phosphates. Phosphorus in phosphates can contribute to eutrophication, which is a process whereby a combination of conditions – nutrient availability, light, warm water temperature, low flow rate and turbidity – trigger disproportionate aquatic plant growth. Blue-green algae blooms are a potential outcome.

In the 1990s Accord (then ACSMA) and its members recognised the seriousness of the blue-green algae issue and assisted in finding solutions. For example, Accord worked cooperatively with a number of State and Federal authorities and funded successful research at the University of NSW to develop practical equipment for the biological removal of phosphorus from sewage.

The initial Accord Phosphorus Scheme came into being in 1994 as an industry contribution to the protection of Australian waterways.

2. Perspective

The range of laundry detergents on the market and the ongoing changes in formulations reflect the needs and preferences of many different consumers. They also reflect the desire of manufacturers to meet these demands while producing effective products which take advantage of technical advancements and meet environmental aspirations.

Phosphates, one type of phosphorus-containing compounds, are used in detergents as "builders". Builders enhance the cleaning efficiency of the detergent by reducing water hardness, preventing removed soil from redepositing during washing, and assisting the emulsifying action of surfactants to remove oily and greasy soils. Complete removal of phosphate ingredients from detergents could potentially diminish the efficacy of the detergent. There are alternative builders but due consideration must also be given to the efficacy and environmental impact of these alternatives. It must also be recognised that phosphorus in detergents is generally unlikely to become a pollutant of Australian waterways.

Since the initial Accord Phosphorus Scheme was introduced, Australian science has made rapid advances in the understanding of algal bloom processes in inland waters and estuaries. For example, it has been shown that stratification (a warm surface layer on top of a cold bottom layer) and light penetration, not nutrient availability, are the major triggers for blooms in the rivers of south-eastern Australia, although nutrient exhaustion does limit the biomass of blooms.[1]

Sources of phosphorus in Australian waterways vary depending on factors such as land use, geology, population density, rainfall and erosion. Understanding of the relevance of these in the Australian situation has developed in the last decade. Research has shown that the biggest contributor of phosphorus in catchments is naturally derived and strongly associated with soil erosion.

For many years it had also been believed that phosphorus from sewage is more readily taken up by algae than phosphorus attached to soil particles originating from erosion in catchments. It is now known that the bioavailability of bound phosphorus is dependent on the characteristics of the sediment to which it is bound. This has relevance in the consideration of whether removal of phosphorus from wastewater or a water body is helpful.

In Australia as a whole, detergents make a small and variable contribution to the phosphorus levels in freshwaters. Detergents may enter waterways via municipal sewage streams but are usually minor contributors to the total phosphorus load in sewage. The bulk arises from human body wastes. In some localised areas and under drought conditions, sewage-derived phosphate can be a significant component of the total river load. However, as alluded to above, removal of detergent phosphates alone will not prevent the occurrence of blue-green algal blooms.

[1] SALT, NUTRIENT, SEDIMENT AND INTERACTIONS. Chapter 5: Managing algal blooms in Australia. Brendan Edgar and Richard Davis. Land & Water Australia, http://lwa.gov.au/files/products/river-landscapes/pk071328/pk071328.pdf

Treatment and recycling of sewage and greywater are components of broader water conservation schemes being developed and implemented in a range of ways around Australia.

Accord recognises that an integrated approach to water care should be taken alongside its Standard. Such an integrated approach may include the following elements:

- reduced water consumption;
- the use of water efficient appliances in homes, and water efficient systems and plant in industry;
- recycling of sewage, greywater and industrial wastewater;
- the judicious use of fertilizers in rural areas; and
- the development of strategies for water bodies to manage water flows, manage sediment and light penetration and monitor phosphorus levels so that potential algal bloom trigger situations are avoided.

3. The Phosphorus Standard

Participants in the Standard:

1) Agree to a voluntary standard for the content and labelling of laundry detergents which introduce 7.8 g phosphorus[2] or less to a normal wash (corresponding to the "P" logo).

2) Agree to a voluntary standard for labelling laundry detergents containing 0.5% phosphorus or less (corresponding to the "NP" logo).

3) Will apply for a licence from Accord if they wish to use the "P" or "NP" logo.

4) If a licence is granted, will introduce clearly visible labelling in the form of a logo ("P" or "NP") which will be displayed prominently on laundry detergents that meet the requirements set out in the Standard.

5) Introduce additional labelling (as set out in Section 5) which explains the significance of using the logos in accordance with the Standard.

4. Guidelines: compliance criteria for labelling

Compliance with the Standard will be determined by a chemical analysis of phosphorus within the product. The analysis is the responsibility of the product manufacturer, the findings being then reported in any application for a licence to use the logos in respect of a product under the Standard.

Compliance calculation for laundry detergents which introduce 7.8 g P or less per wash

For the purpose of the Standard, phosphorus is calculated as dose per total wash and is independent of the volume or weight of laundry being washed, and independent of the wash and rinse water volumes. It is related directly to the quantity of laundry detergent used to wash a load of laundry. The quantity of laundry detergent used tends to be described on product labels in "cups" "caps" or "scoops". For the purpose of calculations for liquid detergents the volume of product held in these measuring devices must be converted to millilitres.

Laundry detergent directions generally give a range of options with regard to water hardness and degree of soiling. For the purpose of the Standard, the calculation is for a "normal wash/load" as described on the product label. If the label advises different product rates for normal washes done in different types of washing machines (e.g. front or top loaders) then the higher of the rates should be used for the calculation.

[2] In the initial development of the Phosphorus Scheme in the early 1990s the standard was for labelling conventionally formulated washing powders which contained 5% phosphorus or less. At that time this equated to 7.8 g phosphorus or less in a normal wash. It cannot now be said that there is a "conventional" washing powder formulation, type of washing machine or wash volume. Under the updated Scheme the level of phosphorus (except in no-phosphorus products) is now associated with the total wash.

Definitions

%p = percentage of phosphorus in the laundry detergent product
V = Product volume per wash (mL)
D = Bulk density or specific gravity of the product (g/mL)
R = Product dose per wash (g)
P = Phosphorus dose per wash (g)

Calculations

Liquid detergent: $P = V \times D \times \%p \div 100$
Powder detergent: $P = R \times \%p \div 100$

Examples

A liquid laundry detergent containing 20% phosphorus and with a specific gravity of 0.8 g/mL is used at a rate of 45 mL product per wash.

$P = V \times D \times 20 \div 100$

$P = 45 \times 0.8 \times 20 \div 100$

$\therefore P = 7.2$ g phosphorus per wash load.

This product complies with the Standard. Application may be made to Accord to license the "P" logo for that product under the Standard.

A laundry powder ultra concentrate containing 28% phosphorus is used at a rate of 35 g product per wash.

$P = R \times \%p \div 100$

$P = 35 \times 28 \div 100$

$\therefore P = 9.8$ g phosphorus per wash load.

This product does not comply with the Standard. Application to Accord to license the "P" logo for that product under the Standard would be declined.

<u>Compliance calculation for "NP" laundry detergents</u>

A dose related calculation is not required to determine qualification for a licence to use the "NP" logo. A product would satisfy the criteria for a licence to use the "NP" logo if the phosphorus content is less than 0.5%.

Even laundry detergents formulated without phosphorus may contain trace quantities of the naturally occurring element. This means there may be an incidental amount of phosphorus which is not part of the product formulation and is present only as a consequence of manufacturing, and, for the purpose of the Standard, does not exceed 0.5% of the content of the product by weight, expressed as percent elemental phosphorus.

Dispute resolution: “P” logoed product

Variations in raw materials and production can result in minor variations to the phosphorus level in a product. As a result occasional packs could slightly exceed the phosphorus levels required by the Standard, but the average will be maintained.

If, following analysis by a NATA registered laboratory, a laundry detergent which has been granted a licence to use the “P” logo is believed to not comply with the Standard, the following sampling protocol is to be used:

a. If an individual pack taken randomly from a retail shelf is analysed and the phosphorus dose per wash is calculated to be greater than 8.6 g (i.e. +10% variation), then the product would not comply with the Standard and the licence to use the ‘P” logo will be immediately cancelled.

b. If an individual pack taken randomly from a retail shelf is analysed and the phosphorus dose per wash is calculated to be between 7.8 g and 8.6 g, then a further nine (9) packs are to be taken, showing different production dates, to ensure a valid mean calculation.

Method

Equal aliquots of laundry detergent product are to be sampled from each of the 10 packs (including the first) and the 10 aliquots are to be thoroughly mixed together. Two samples are to be taken from this composite and analysed for phosphorus.

If the average of the phosphorus values of the two analyses is greater than 7.8 g per wash, the product does not comply with the Standard and the licence to use the ‘P” logo will be immediately cancelled.

Any commonly accepted method for phosphorus analysis is acceptable. As the Standard will be administered by Accord, the Association will nominate a suitably recognised test method in the case of dispute.

Dispute resolution: “NP” logoed product

If a single pack of a product exceeds 0.53% phosphorus by weight, the product does not comply with the Standard and the licence to use the "NP" logo will be immediately cancelled.

If the analysis of a single pack is between 0.5% and 0.53% phosphorus by weight, then a composite sample of ten (10) packs should be taken, similar to that described above for phosphatic products.

If the average of duplicate analysis from the composite sample is greater than 0.5% by weight, the product does not comply with the Standard and the licence to use the "NP" logo will be immediately cancelled.

5. Guidelines: logo use

If a licence has been granted for the use of the “P” or “NP” logo, then the relevant “P” or “NP” logo will be displayed prominently on the packaging of domestic laundry detergent products to clearly indicate compliance with the Standard to consumers.

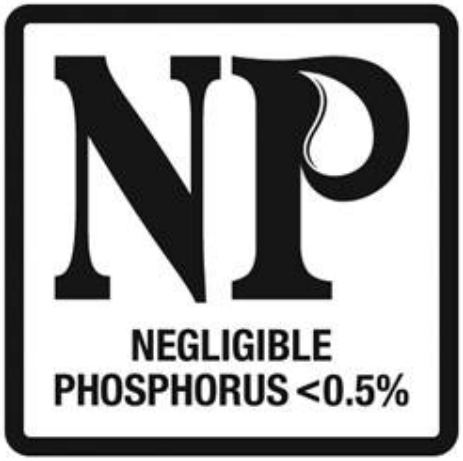
The following guidelines will apply to the logos to ensure that they are easily seen and understood by consumers, and are always used in a consistent manner.

There are four minimum sizes for the logo corresponding to the area of the face of the package where the logo will be placed. The object is to maximise the logo size, consistent with the area available and pack graphics. The label area for non-rectangular labels (eg bottles) is calculated by multiplying maximum height by maximum width and ignoring cutouts.

Minimum logo height (mm)	Surface area (cm^2)
10	≤150
15	>150 and ≤250
20	>250 and ≤650
25	>650

The logo must not in any way be coupled with a product brand name.

The logo artwork will be supplied by Accord when a licence to use the trade mark is granted and the Trade Mark Licence Agreement signed by both parties.



On-Pack Information

The consumer will become aware of the presence of one of the logos at the time of purchase. Other information that the consumer may require would be:

- what the logo represents
- the actual phosphorus level

This additional information will be provided on the back or side of pack either:

- near dosing instructions;
- in the ingredients listing, or
- in an environmental information panel.

The information will take the following form:

For Phosphatic Products

A small replica of the “P” logo or the words "Phosphorus Content", followed by the words "This symbol lets you know that this product complies with agreed industry standards on phosphorus which imposes a maximum content of 7.8 grams per wash".

Then an indication of the phosphorus level would follow. The words to be used are:

"The level of phosphorus in this product is about x g/wash".

In addition to the concentration range, the manufacturer may communicate the purpose of the standard e.g. "This standard is designed to reduce the amount of phosphorus entering our waterways".

These last words are optional.

For Non-Phosphatic Products

A small replica of the “NP” logo or the words "Phosphorus Content", followed by the most appropriate words from the below options:

a) “This product contains no added phosphorus. Levels below 0.5% may be present.”

b) “This product contains less than 0.5% phosphorus.”

c) “This product contains no added phosphate. Phosphorus levels below 0.5% may be present.”

6. Guidelines: administration of the Phosphorus Standard

The Standard will be administered by Accord. The logo designs are intended to be registered as Trade Marks under the *Trade Marks Act 1995* (Cth) which will give Accord the exclusive rights to use the logos. Other entities may only use the “P” and “NP” logos with Accord’s express permission.

When a manufacturer wishes to use the logo, the company must apply to Accord. A Director of the company making the application must provide information regarding the phosphorus content of the product in for form of Attachment 1 to this document. Accord will review the application and license the use of the logo to the applicant if the product meets the requirements of the Standard by entering into a Trade Mark Licence Agreement.

The details set out in the application will be confidential. However, any *bona fide* enquirer will be advised of the manufacturer's name and phosphorus level or range of any product for which a licence has been granted to use the “P” or “NP” logos.

The logos will be available to any manufacturer, distributor or importer, whether an Accord member or not. If Accord becomes aware at any time that the standards are not being met by a product bearing one of the logos, the licence to use the logo will be immediately cancelled. The fee for the licence to use the logos will be a one-off cost to cover the administrative work. This will be waived for active and financial members of the association.

7. Guidelines: products covered by the Phosphorus Standard

The Standard applies to laundry detergents only and is entirely voluntary. Laundry detergent products that contain more than 7.8 g phosphorus per wash are not eligible for inclusion in

the Standard or to licence the logos, but there is no regulatory or legal impediment to production and sale of such products.

Because Accord membership represents over 90% of the tonnage of domestic laundry detergents sold throughout Australia, the vast majority of laundry detergents on supermarket shelves in Australia will benefit from the licence to use one of the two logos. It has been agreed that new laundry detergents produced by Accord members will not contain concentrations of phosphorus above the industry standard.

8. Guidelines: process for applicants

1. Read this Standard of Practice and Guidelines in full.

2. Apply to Accord for a licence to use the logos, using the form attached as 'Attachment 1' to this document.

3. If Accord agrees to grant a licence a Trade Mark Licence Agreement will be forwarded for completion.

4. The applicant company is to return the completed, signed and witnessed Trade Mark Licence Agreement to Accord, together with the licence fee (if applicable).

5. On receipt of these items Accord will check the application and signed Trade Mark Licence Agreement. Provided these meet the requirements of the Standard, a copy of the Trade Mark Licence Agreement, signed on behalf of Accord, together with copies of the logos suitable for reproduction, will be sent to the company.

6. The company is obliged to keep the Accord records updated by completing the form attached to this document for any new laundry detergent products they wish to include in their Trade Mark License. They should also inform Accord of products deleted from their range or no longer compliant with the Standard.

Consumer information

Further information may be obtained from the Accord website www.accord.asn.au or from the major laundry detergent manufacturers. Their contact details appear on product labels.

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Attachment 1: Application for license

APPLICATION FOR PERMISSION TO USE THE ACCORD LOGOS AND LABELLING FORMAT FOR A HOUSEHOLD LAUNDRY DETERGENT

(To be completed by a Director of the applicant company)

I _____ _____

Name Title

of _____ _____

Company Name Address

request permission to licence the Accord Logo specified below under the terms of the Trade Mark Licence Agreement for labelling of the following products

Brand Name	Logo to be licensed	Dose rate of product per wash, g	Phosphorus concentration in the product, %

I certify that the label(s) for the product(s) listed above will comply with the requirements set out in the document "ACCORD PHOSPHORUS STANDARD for Phosphorus Content and Labelling of Household Laundry Detergents".

Signed .....

Date.....

Return the complete form to:
Accord Australasia Ltd
PO Box 290
Broadway NSW 2007