More Questions than Answers?

The testing of household products on animals

OneKind

MORE QUESTIONS THAN ANSWERS?

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CHEMICALS BY THE DOZEN

What's the problem?

The UK public spends millions of pounds every week on household products, with supermarket shelves and kitchen cupboards dominated by products from a small number of multinational giant manufacturers. They come in attractive packaging, they smell nice and they have a job to do.

We may not associate these products with animal welfare problems, because they don't appear to have animal tested or animal derived ingredients. At present, however, animals can still be subjected to painful and distressing experiments so that we can access ever more 'new and improved' products to clean and decorate our houses.

Household products are useful and in many ways necessary and their safety to consumers is of paramount importance. However, the use of animals in painful tests for ingredients such as new lemon fragrance in dishwashing products is of great concern to the public. In the wake of the long-awaited European ban on the testing of cosmetics on animals and the marketing of animal-tested cosmetics, many consumers now question the ethics of animal testing on any "non-essential" products. Also important to note is that there are thousands of ingredients already available to the industry for formulation and reformulation of product ranges. This means that any animal test currently required by law only becomes "required" when a company wants to develop a new ingredient.

In practice, almost no animals are used nowadays to test "finished" household products in the UK, although such use remains legal. In 2010, 24 animals were used in procedures for the testing of substances used in the household. In 2009, 2011, 2012 and 2013 no animals were used in procedures for the testing of substances used in the household[1]. Whilst this seems reassuring, substances which have been tested under other categories (for example in 2013 in the UK, 29,950 animals were used to test substances simply categorised as for 'Industry') may ultimately be used in household products.

1. Experiments: Animal Answer to Written Question by Adrian Sanders MP 181214

In 2002, the Boyd Group[2] published a discussion paper[3] on the use of animals in testing household products. Even then, the low number of animals being used to test finished products was noted, and the Group produced a statement of principle, which to some extent reflected the direction that the testing industry was already taking:

"Members believe it is unacceptable to use animals in developing and testing new products that are widely perceived to be convenience products for which there is little potential need because similar non-medicinal products with adequate efficacy are widely available. The consensus within the Group is that animals should not be used in tests on another variety of infant nappy, another washing powder, or any other kind of finished 'household product' and that such tests ought not to be allowed in the UK."

More Questions than Answers? **explores the scale of the household product market and the type of tests that have been carried out on household product ingredients over the last six decades. This history documents many horrors inflicted on animals. Some will argue that their suffering was unavoidable in the name of human safety. Many will disagree, particularly in view of the number of tests that were repeated for very similar purposes.**

OneKind believes that now, in 2015, enough is enough.

With the reduction in testing of finished products and a general acceptance that animal testing should be reduced and replaced, the time is right for a comprehensive ban on all animal testing of household products – not only the finished products but also the thousands of individual ingredients that go into them. That is the key challenge for industry, consumers and government.

What is a household product?

There is no standard definition of a household product. In 2002, the Boyd Group stated:

"[...] it is evident that any such ban on animal testing would apply to all products that are intended for use in the home and widely available in supermarkets, general and DIY stores. This would cover:

- Detergents and other products for use in laundry (including stain removers) and dishwashing (including rinse-aids, dishwasher cleaners)
- Household cleaners for ovens, baths, toilets, surfaces, windows, cars and similar
- Air-fresheners, toilet blocks and similar
- Polishes for furniture, cars, shoes and similar
- Paper products such as infant nappies, sanitary towels, tissues and hand-towels (some products in these categories may also be considered cosmetic or personal care items)
- Paints, glues (and removers), and other furnishing and DIY products intended for use in the home
- Household pesticides (which are mostly milder re-formulations of agrochemicals that have already been tested according to regulatory requirements, and so should not require further testing)"[4]

Which common brands and products are on the market?

To determine which household brands and products are on the market, a survey of the 'big four' major supermarkets - Asda, Morrisons, Sainsbury's and Tesco was carried out by OneKind. These four companies had a combined market share of 73.6 % of the UK grocery market in the 12 weeks ending 30 March 2014.

One London branch of each supermarket was visited by OneKind. The products seen were listed by brand (e.g. Fairy, Bold), name (e.g. washing up liquid, dishwasher tablets) and the 8 digit code on the packaging.

50 brands were listed from the four supermarkets:

Ajax, Dermassage, Fabuloso, Palmolive, Suavitel, Bloo, Easy, Jeyes, Parazone, Mr Clean, TIDE, GAIN, Downy, Febreze, Flash, Fairy, Ariel, Daz, Bold, Lenor, Airwick, Dettol, Dr Sheen, Brasso, Calgon, Cillit Bang, Finish, Harpic, Silvo, Vanish, Vetroclean, Windolene, Woolite, Surcare, Prudax, Brillo, Duck, Glade, Goddard's, Mr Muscle, Oust, Pledge, Shout, Comfort, Domestos, GIF, Persil, SUN, SURF and CIF.

Products under these brands included all-purpose cleaners, dishwasher tablets, bleach alternatives, degreasers, air freshener, antibacterial floor cleaner, cleansers, rim block and aerosols.

It was noticed in the supermarkets visited by OneKind that many of the 'new and improved' products had only a slight variation in composition from apparently older products on shelves. For example, some of these products differed only with regards to a fragrance.

Excluding supermarket own brands, the major companies manufacturing household products sold in the four supermarkets were Procter & Gamble, Unilever, S.C. Johnson, Colgate Palmolive, Jeyes Ltd., Reckitt Benckiser LLC and Roche.

What ingredients are in these products?

OneKind sampled products available on supermarket shelves, aiming to read the labels (the consumer's only guide when out shopping), identify the ingredients and – if possible – trace any testing on animals that would have been involved in the history of producing the item. It seemed to us that such information should be readily available to allow consumers to make informed choices.

The questions that OneKind set out to answer were:

- Which common brands and products are on the market?
- What ingredients are in these products?
- What animal tests have been carried out on these ingredients?
- What are the company policies?

We found that the labels on these products tend to show fairly short lists of ingredients, described in generic terms for chemicals, such as "ionic surfactants".

All ingredients used in cosmetic, toiletry and perfumery products must be listed on a website as part of the requirements of the EU detergents regulations[5] although full details do not need to be made publicly available.

To access ingredient lists, most labels require consumers to put in a code to their websites to obtain data sheets. It was necessary to follow up on these websites to find more specific information, and then to do more research to gain an understanding of the nature and purpose of the ingredients.

As a rule, each ingredient is described by its common or International Nomenclature of Cosmetic Ingredients (INCI) name (a common naming system agreed by the industry in order to avoid the public having to know ingredient names in many different languages). Material Safety Data Sheet (MSDS) for the products are also provided[6].

The more detailed lists showed that the number of ingredients in individual products varied hugely. Some products contained a handful of ingredients while others had dozens.

Overleaf are some typical examples - chosen at random - from specific product labels.

2. The Boyd Group is a forum for open exchange of views on issues of concern related to the use of animals in science. It was founded in 1992 following correspondence and meetings between Colin Blakemore, Professor of Physiology at the University of Oxford, and anti-vivisectionist Les Ward, then Director of Advocates for Animals (now OneKind). Participants in the Group include veterinarians, scientists using animals (from industry and academia), members of animal welfare organisations, anti-vivisectionists, members of government and charitable bodies funding or directly engaged in research, philosophers and others.
3. THE USE OF ANIMALS IN TESTING HOUSEHOLD PRODUCTS A Discussion Paper and Statement of Principle The Boyd Group, December 2002 www.boyd-group.demon.co.uk/householdproducts.pdf4.ibid
4. ibid
5. Regulation (EC) No 648/2004; Regulation (EU) No 259/2012
6. See, for example P&G Product Safety website www.pg.com/productsafety/search_results.php?searchtext=All % 20MSDS&category=msds&submit=Search&submit=Search

Laundry detergent: Persil Biological Powder for Fabrics

The product label listed:

5-15 % Anionic surfactants, Oxygen-based bleaching agents, <5 % Enzymes, Nonionic surfactants, Optical brighteners, Perfume, Phosphonates, Polycarbonates, Polycarboxylates, Soap, Zeolites, Butylphenyl Methylpropional, Geraniol, Hexyl Cinnamal.

The Persil label referred us to the Unilever website[7]. This provided a more detailed list of 52 ingredients in descending order by quantity, with additional information about the purpose of each ingredient:

Ingredients	Functions
Sodium sulphate	Bulking agent
Sodium carbonate	Builder
Sodium Dodecylbenzenesulfonate	Surfactant
Sodium Carbonate Peroxide	Oxidising Agent
Sodium Silicate	Builder
Zeolite	Builder
Aqua	Bulking Agent
TAED	Bleach Precursor
Citric acid	Builder
C12-15 Pareth-7	Surfactant
Bentonite	Softness Extender
Stearic Acid	Surfactant
Parfum	Fragrance
Sodium Acrylic Acid/MA Copolymer	Structurant
Cellulose Gum	Anti-redeposition Agent
Corn Starch Modified	Enzyme Stabiliser
Sodium chloride	Process by-product
Tetrasodium Etidronate	Sequestrant
Calcium Sodium EDTMP	Sequestrant
Disodium Anilinomorpholinotriazinylaminostilbenesulfonate	Optical Brightener
Polyethylene Terephthalate	Anti-redeposition Agent
Sodium bicarbonate	Builder
Phenylpropyl Ethyl Methicone	Antifoaming Agent
Cellulose	Binder
Calcium carbonate	Bulking Agent
Glyceryl Stearates	Emulsion Stabiliser
PEG-75	Binder
Kaolin	Bulking Agent
Titanium dioxide	Colourant
Geraniol	Fragrance
Sodium Polyacrylate	Structurant
Disodium Distyrylbiphenyl Disulfonate	Optical Brightener
Butylphenyl Methylpropional	Fragrance
Dextrin	Binder
Subtilisin	Enzyme
Imidazolidinone	Process by-product
Sucrose	Binder
CI45100	Colourant
Sorbitol	Enzyme Stabiliser
Aluminum Silicate	Anticaking Agent
Polyoxymethylene Melamine	Process by-product
Sodium Polyaryl Sulphonate	Process by-product
Lipase	Enzyme
Amylase	Enzyme
CI 12490	Colourant
Xanthan gum	Process by-product
Hydroxypropyl methyl cellulose	Binder
CI 42090	Colourant
Sodium Thiosulfate	Enzyme Stabiliser
Mannanase	Enzyme
CI 11680	Colourant
CI 61585	Colourant

7. www.unilever.com

Fabric conditioner: Comfort Fabric Conditioner

The product label stated:

Comfort concentrate fabric conditioner contains amongst other ingredients: 5 – 15 % Cationic surfactants. <5 % Perfume, Hexyl Cinnamal, Butylphenyl Methylpropional, Liminene, Benzisothiazolinone.

On the Unilever website[8], the full list of 22 ingredients and functions for the closest analogous product was as follows:

Ingredients	Functions
Aqua	Solvent
Dihydrogenated Tallowoylethyl Hydroxyethylmonium Methosulfate	Fabric Conditioner Agent
Isopropyl alcohol	Solvent
Parfum	Fragrance
Cetearyl Alcohol	Softness Extender
Parfum	Fragrance
Laureth-20	Surfactant
Hexyl Cinnamal	Fragrance
Butylphenyl Methylpropional	Fragrance
Limonene	Fragrance
Imidazolidinone	Encapsulation Agent
Polyoxymethylene Melamine	Encapsulation Agent
Geraniol	Fragrance
Benzisothiazolinone	Preservative
Dimethicone	Antifoaming Agent
Polymeric Yellow Colourant	Colourant
Trimethylsiloxysilicate	Antifoaming agent
Hydrogenated Vegetable Glycerides	Skin Conditioning Agent
Glycol Stearate	Emulsion Stabiliser
Cellulose Gum	Emulsion Stabiliser
Polymeric Pink Colourant	Colourant
Cetyl Hydroxyethylcellulose	Emulsion Stabiliser

8. www.unilever.com

Dishwasher detergents: Finish Powerball All in 1 for dishwashers

The product label listed:

>30 % Phosphates, 5 -15 % Oxygen-based bleaching agents, 5 – 15 % Polycarboxylates, <5 % Non-ionic surfactants, Enzymes (Protease, Amylase), perfume, limonene.

The Finish label referred us to the Reckitt Benckiser information website[9] where we were able to search by product name for a more comprehensive ingredient list. A note on the site explained that the latest formulations present on the market were shown, and might not exactly match the product label.

The ingredients list for a very similar product, Finish All in 1 Tablets – Regular, posted on 26 February 2014, displayed the following 26 product ingredients in descending order:

Ingredients
Pentopotassium Triphosphate
Sodium Carbonate
Sodium Carbonate Peroxide
Aqua
2-propenoic acid, homopolymer, sodium salt, sulfonated
PEG-130-PEG-150
PEG-30-PEG-40
Cellulose
Ceteareth-25
Antifoam
Sucrose
Citric Acid
TAED
Oryza Sativa Starch
Methyl-1H-benzotriazole
Fatty alcohol alkoxylate
Tetrasodium Etidronate
PEG 10
Protease
Glycerol
Manganese Oxalate
Parfum
Colorant
Magnesium Stearate
Limonene
Amylase

The Reckitt Benckiser site did not tell us what family of ingredients these chemicals fell into or what their purpose was. However, the Cleanright information website[10] provided by two European trade associations, the International Association for Soaps, Detergents and Maintenance Products (AISE)[11] and the European Chemical Industry Council (Cefic)[12] provides an ingredients database and an explanation about "families" of ingredients. It gives information about the types of products using certain ingredients, the family group, the Chemical Abstract Service (CAS) index number[13], safety information and other information.

Not all the Finish ingredients were listed on the Cleanright website but there was sufficient information to see that the families, or functions, included: pH Adjusters, Oxidising Agents, Solvents, Binders, Nonionic Surfactants, Builders/Citrates, Bleach precursors, Sequestrants and Enzymes.

9. www.rbeuroinfo.com
10. www.cleanright.eu
11. www.aise.eu
12. www.cefic.org
13. A CAS registry number is a unique international numerical identifier including up to 9 digits to designate one substance for chemical compounds.

What do these chemicals do?

Typical household products contain literally dozens of ingredients with very specific purposes and these are grouped into a large number of "families".

For example, one family of ingredients found in many products is surfactants. These are extremely common ingredients used to change the surface tension of water to assist cleansing, wetting surfaces, foaming and emulsifying (the suspension of one liquid evenly within another). All three products in our small sample contained surfactants.

- Persil contained four surfactants: Sodium Dodecylbenzenesulfonate (anionic), C12-15 Pareth-7 Non-ionic, Stearic Acid (soap) and Sodium Acrylic Acid/MA Copolymer;
- Comfort contained just one, Laureth-20 (described as a "solubiliser" on the cleanright website) and
- Finish Dishwasher tablets contained two non-ionic surfactants, Ceteareth-25 and Fatty alcohol alkoxylate

According to the Cleanright website, surfactants fall into five categories.

Soaps: "These salts of fatty acids are more commonly known as "soaps". They may be added to the product in the form of the fatty acids; in the product matrix the salts will be formed. The soaps are commonly used surfactants in laundry and cleaning products."

Amphoteric Surfactants: "These surfactants are very mild, making them particularly suited for use in personal care and household cleaning products. They can be anionic (negatively charged), cationic (positively charged) or non-ionic (no charge) in solution, depending on the acidity or pH of the water."

Cationic Surfactants: "In fabric softeners and in detergents with built-in fabric softener, cationic surfactants provide softness. Their main use in laundry products is in rinse added fabric softeners, such as esterquats, one of the most widely used cationic surfactants in rinse added fabric softeners. In household and bathroom cleaners, cationic surfactants contribute to the disinfecting/sanitizing properties."

Nonionic Surfactants: "These surfactants do not have an electrical charge, which makes them resistant to water hardness deactivation. They are excellent grease removers that are used in laundry products, household cleaners and hand dishwashing liquids. Alcohol ethoxylates (AE) [...] are a major class of non-ionic surfactants used in laundry detergents and to a lesser extent in household cleaners, industrial cleaners, cosmetics, agriculture, and in textile, paper, oil and other process industries."

Anionic Surfactants: "These surfactants are particularly effective at oily soil cleaning and oil/clay soil suspension. They can react in the wash water with the positively charged water hardness ions (calcium and magnesium), which can lead to partial deactivation."[14]

Are they tested on animals?

To find out what sort of tests were carried out on common ingredients such as surfactants we examined data sheets, scientific literature and project information. Remember, this is only one family of ingredients and there are hundreds, if not thousands, on the market. Given the massive number of chemicals involved and the long history of animal testing, our research could still only provide a snapshot and not the full picture.

We looked at Risk Assessment reports from the European Chemicals Agency (ECHA)[15] where available. These Risk Assessments were carried out by government, industry, and public interest groups in accordance with Council Regulation (EEC) 793/931 on the evaluation and control of the risks of 'existing' substances – chemicals in use within the European Community before September 1981. This legislation has now been superseded by the REACH regulation (see page 22).

We also looked at risk assessment documents published by the HERA (Human & Environmental Risk Assessment) project[16]. This project, owned by the two industry bodies mentioned above – the International Association for Soaps, Detergents and Maintenance Products (AISE) and the European Chemical Industry Council (Cefic) – aims to assess "risks to human health and the environment from ingredients of household cleaning products during the two scenarios 'Use in the Household' and 'Disposal to the Environment'."

Together, the ECHA and HERA Risk Assessments provide a broad overview of experiments of all types carried out over the years to test chemicals in household product ingredients, and the companies behind the tests. The ECHA experiments were carried out between 1997 and 2002, and the experiments described in the HERA Risk Assessments prior to that.

The primary purpose of the tests was toxicity testing.

14. http://uk.cleanright.eu/index.php?option=com_content&task=pdf&Itemid=168
15. http://echa.europa.eu
16. http://www.heraproject.com

What is toxicity testing?

Toxicity is a measure of the degree to which something is poisonous. Toxicity testing is carried out in the UK for purposes of safety or efficacy of pharmaceutical preparations as well as of industrial chemicals. Animals who do not die in the course of the experiment will usually be killed ("sacrificed", in industry jargon), in order to study their tissues.

Toxicity tests can involve administering the chemical by gavage (a long tube pushed right down to the stomach), by injection, or both. Inhalation tests require animals to inhale vapour in an air-tight chamber, or via a mask. In many tests, extremely high doses of test compound (often thousands of times more than any conceivable human exposure) are given so as to reveal possible adverse effects. The effects can include vomiting, diarrhoea, haemorrhage, breathing difficulties, severe irritation, seizures, convulsions and, eventually, death. Long-term toxicity tests may result in liver damage, weight loss, tumours, vomiting, convulsions and bleeding. Other key adverse effects which can easily be observed in humans (for example headache, nausea or blurred vision) cannot be reliably measured in animals in the same way. Rodents have been used for decades in toxicity tests, yet unlike humans they cannot vomit.

For skin irritancy and allergy tests, the test substance is applied to the shaved/scratched backs of rabbits or guinea-pigs. Any swelling, redness, inflammation, cracking or ulceration over one to two weeks is recorded. Pain relief is almost never given. The animals are then killed.

Toxicity tests typically involve single chemicals and will therefore not detect the effects of potentially dangerous combinations of chemicals (the so-called 'cocktail' effect). The sheer number and combinations of chemicals to which humans are exposed simultaneously is something that cannot be duplicated in animals in a laboratory.

The Risk Assessment reports studied described toxicity tests using all the routes of administration described above, and others. Many of the studies were carried out in the 1970s and 1980s and it is important to note that certain tests described in the Risk Assessments were highlighted as not complying with good laboratory practice guidelines. LD 50 tests – to ascertain the dosage at which 50 % of the test subjects will die - have in fact been banned in the UK since 2001 although a great many were carried out for household product testing. However, other lethal toxicity tests on animals are still routinely used in the UK.

The OneKind research summarised in Part 2 provides a grim illustration of the effects that toxicity studies of household chemicals have had on sentient living creatures, over many decades.

ANIMALS BY THE THOUSAND

What sort of animal tests have been used?

We extracted information from HERA (Human & Environmental Risk Assessment) Risk Assessment reports for common household product ingredients, principally surfactants and their agents, fragrances and enzymes.

Information was gathered for the following categories of ingredient: AHTN, Alcohol ethoxylates, Alcohol Ethoxysulphates, Soluble Silicates, Amylase, Lipase and Cellulase, Hydrogen Peroxide, Linear Alkylbenzene Sulphonate, Polycarboxylate Homopolymer, Protease, Phosphonates, Sodium Carbonate (soda ash), Sodium Percarbonate and Sodium Sulphate, and Hydrotropes -Xylene / Cumene / Toluene Sulphonate.

Some of the experiments using animals to test these ingredients are shown below. Again, these are only examples. A more comprehensive document is available from OneKind.

1. **AHTN**

AHTN (6-Acetyl-1,1,2,4,4,7-hexamethyltetraline) is one of a group of substances used in fragrances, known collectively as polycyclic musks.

The reports showed numerous toxicity tests carried out in the 1970s and 1980s using rats to test these artificial fragrances, which were administered orally by gavage, by application to shaved skin, or by intraperitoneal injection. In one acute oral toxicity study, the researchers observed:

"The majority of animals showed lethargy, piloerection, hunched position, oscillated movements, shaggy coat and emaciation. Other occasional signs included green urine, hypothermia, half-closed eyes, difficult breathing and increased breathing, prostration and lacrimation. Upon gross examination alterations were seen in stomach and forestomach, liver and kidneys (discoloration), testes (atrophy) and bladder. Deaths occurred on days 5 to 9."[17]

2. **Alcohol Ethoxylates**

Alcohol ethoxylates (AE) are a major class of non-ionic surfactants widely used in laundry detergents and to a lesser extent in household cleaners, institutional and industrial cleaners, cosmetics, agriculture, and in textile, paper, oil and other process industries.

A well-known example of an ethoxysulphate is sodium laureth sulphate, or sodium lauryl ether sulphate (SLES), a foaming agent in shampoos and toothpastes, as well as industrial detergents. SLES has been shown to produce eye and/or skin irritation in experimental animals and in some human test subjects.

Companies that use SLES include S.G. Johnson (Mr. Muscle, Pledge, Shout, Brillo, Duck, Goddard), Jeyes (Bloo, Easy), P&G (Ariel, Daz, Fairy) and Reckitt Benckiser LLC (Dettol, Mr Sheen, Vanish, Windolene).

17. Meisel, M.L. (1982). Fixolide, An acute oral toxicity study (LD50) in the rat. Hazleton Laboratories Deutschland GmbH, Munster. Report no. 98–161/104, cited in HERA Risk Assessment www.heraproject.com/RiskAssessment.cfm?SUBID=28

AE tests were reported under the headings of Acute oral toxicity; Acute inhalation toxicity; Acute dermal toxicity; Corrosiveness/irritation; Skin irritation; Eye irritation; Skin Sensitization; Repeated dose toxicity - Oral route; Repeated dose toxicity - Dermal route; Carcinogenicity; Reproductive toxicity; Developmental toxicity/teratogenicity and Toxicokinetics.

The acute oral toxicity of AE has been evaluated in numerous studies with rats, dogs and monkeys. For example, in two LD-50 studies (assessing the dose that proves lethal for 50 % of the study group) on an AE known as C14-15AE13, groups of five male and five female rats were used. All died after exposure to the undiluted material.

Before they died, the researchers noted the animals suffering from symptoms including "diarrhoea, dilated pupil, pilo-erection, polyuria, salivation, chromodacryorrhea, lacrimation, ptosis, epistaxis, bright yellow urine, activity decrease, lethargy and tremors. Clinical and necropsy findings included diarrhoea, polyuria, epistaxis, salivation, oral and nasal discharge, discoloration of the adrenal glands and mesenteric lymph nodes, discoloration of the stomach and intestinal contents, ulcerations on stomach, discoloration of the liver and spleen, pronounced serosal blood vessels, discoloration of the kidneys, gastrointestinal tract distended with gas, discoloration of abdominal fat, and variations thereof."[18]

In a 1996 study, groups of rats received varying doses of an AE called Dobanol. Within four hours, symptoms appeared including "prone posture, ataxia and changes of breathing (e.g., hyperpnoea, tachypnoea, rales or gasping)" and three of the rats had died within 48 hours.[19]

In a UK test of an AE called Synperonic A3, repeated skin applications were made over 12 days to three female rats. Local reactions resulting from the treatment were assessed each day. Repeated application of the undiluted product under fully occlusive conditions elicited distinct dermal irritation by day seven of the test.

"Similar levels of erythema and oedema were observed in one animal throughout the remainder of the study (days 7-12; erythema and oedema scores of 2) but in the other two animals the reactions increased, and moderate erythema and oedema had developed by day 10 (day 7; erythema and oedema scores of 2 and 3; days 10-12 erythema and oedema scores of 3). Cracking, scaling and scab formation was observed in all three animals throughout the latter half of the study."[20]

Another Dobanol test studied its eye irritation potential, using a single rabbit.

"The first response to the test material centred upon effects in the cornea. Initial extensive corneal damage was followed by regeneration of the corneal epithelium. On day 7, neovascularization of the cornea developed which became marked by day 11. As a consequence of this irreversible damage, the study was terminated and the test animal sacrificed."[21]

A previous Dobanol test in the 1970s had also shown severe effects on rabbits' eyes:

"The undiluted sample was severely irritating to rabbits' eyes causing conjunctivitis and corneal opacity in both animals 24 hours after application. In view of the severity of the effects the rabbits were killed before the end of the experiment." [22]

3. **Alcohol Ethoxysulphates (AES)**

Alcohol ethoxysulphates (AES) are a widely used class of anionic surfactants. They are used in household cleaning products, personal care products, institutional cleaners and industrial cleaning processes, and as industrial process aids in emulsion polymerisation and as additives during plastics and paint production. Uses in household cleaning products, the scope of HERA, include laundry detergents, hand dishwashing liquids, and various hard surface cleaners.

Companies that use AES include S.G. Johnson (Mr. Muscle, Pledge, Shout, Brillo, Duck, Goddard), Jeyes (Bloo, Easy), P&G (Ariel, Daz, Fairy) and Reckitt Benckiser LLC (Dettol, Mr Sheen, Vanish, Windowlene).

Reports were found of oral and dermal toxicity tests, skin and eye irritation tests, repeated dose toxicity tests and reproduction tests.[23]

18. Shell Oil Company. (1979d). Rat acute oral toxicity: Neodol 45-13. Unpublished report number 1029-79;Shell Oil Company. (1979e). Rat acute oral toxicity: Neodol 45-13. Unpublished report number 996-78 cited in HERA Risk Assessment www.heraproject.com/RiskAssessment.cfm?SUBID=34
19. Shell International BV. (1996a). Dobanol 79-6: Acute oral toxicity in the rat. Unpublished report number HSE 96.1157, cited in HERA Risk Assessment www.heraproject.com/RiskAssessment.cfm?SUBID=34
20. Huntingdon Research Centre. (1977b). Synperonic A3: Assessment of skin irritation and skin sensitization Unpublished report, cited in HERA Risk Assessment www.heraproject.com/RiskAssessment.cfm?SUBID=34
21. Shell International BV. (1995c). Dobanol 79-6: Eye irritation in the rabbit. Unpublished report number HSE 95.1160, cited in HERA Risk Assessment www.heraproject.com/RiskAssessment.cfm?SUBID=34
22. Shell Research Ltd. (1975a). Toxicity of detergents: Acute toxicity, skin and eye irritancy and skin sensitization potential of Dobanol 23-6.5. Unpublished report number TLGR.0036.75, cited in HERA Risk Assessment www.heraproject.com/RiskAssessment.cfm?SUBID=34
23. HERA Risk Assessment www.heraproject.com/RiskAssessment.cfm?SUBID=1

4. **Soluble Silicates**

Soluble silicates are solid inorganic compounds used in a large variety of household cleaning products such as regular and compact laundry detergents (powder, tablets), automatic dishwashing detergents (powder, liquid, gel, tablets), toilet cleaners, and surface cleaners. They provide a number of functions including sequestration of "water hardness", enabling surfactants to function effectively, bleaching, pH buffering and corrosion prevention.

Companies that use soluble silicates include Reckitt Benckiser LLC (Finish, Harpic), S. C. Johnson (Mr. Muscle), Unilever (CIF, SURF), Colgate Palmolive (Ajax, Palmolive) and P&G (Ariel, Fairy).

LD50 tests in the 1970s and 1980s observed clinical symptoms in rats including "apathy, staggering gait, dyspnoea, piloerection, abdominal discomfort, and unconsciousness. The results of autopsy revealed acute gastro-enteritis, vascular congestion, mottled livers, changes in pH of body fluids, shock, chemical irritation and/or corrosion of the viscera."[24]

In the early 1970s, researchers assessed the effect on fertility of sodium silicate (MR 3.2) administered via drinking water to rats. For four consecutive generations, the rats were mated and the total number of offspring analysed. Survival of offspring until weaning was poor, even in the control groups.

"Litters born to females receiving silicate were frequently stillborn or small and weak, with survival limited to only a few days. In addition, cannibalism was prevalent and necrosis of the tail and occasionally the feet was observed in offspring of silicate-treated animals. Severe limitations of the study and inter-current deaths, including controls made it difficult to draw any firm conclusions from this study." [25]

5. **Polyacrylic acid homopolymer**

Water-soluble linear polycarboxylates are used in household cleaning products, such as laundry detergents, automatic dishwashing detergents and various hard surface-cleaning formulations, and also in institutional and industrial cleaning processes and a variety of technical applications. Polycarboxylates are used in low-phosphate and phosphate-free detergents for avoiding incrustation and soil redeposition.

Companies that use polyacrylic acid homopolymers (polycarboxylate) include Jeyes (Bloo, Parazone), Reckitt Benckiser LLC (Brasso, Airwick, Calgon, Glade, Finish), Rosche (Prudax), P&G (Ariel, Fairy, Febreeze, GAIN), Unilever (CIF), Colgate Palmolive (Palmolive) and S. C. Johnson (Glade).

In addition to acute oral toxicity and eye irritation studies, an inhalation study from the 1990s, involved exposing 25 male and 25 female rats to different doses of the polymer for different periods over 13 weeks. The substance was administered as a dust aerosol. Ten animals were allowed to recover for a period of a further 91 days, after which they were killed. Body and organ weights, food and water consumption, clinical observation and blood chemistry were all within the normal range.

"Histopathology of lung tissues from the animals necropsied after the last exposure revealed signs of mild pulmonary irritation based on at least one of the following local lung effects: increase in polymorphonuclear granulocytes or alveolar macrophages, pneumocyte hyperplasia, alveolar wall thickening and focal alveolitis in the animals exposed to 1 and 5 mg/m3 of P-AA4,500."[26]

6. **Amylase, Cellulase and Lipase**

Amylases, cellulases and lipases used in detergents are hydrolytic enzymes, used in detergents and other technical applications like textile or pulp and paper industry to remove deposits and stains. Amylase acts on stains containing starch, lipase against natural fats and oils. Cellulase is used for anti pilling, colour brightening, and antigreying.

Companies that use these ingredients include:

Amylase - Reckitt Benckiser LLC (Finish, Vanish) Rosche (Prudax), Unilever (Persil), Colgate Palmolive (Ajax), Jeyes (Easy), P&G (Ariel, Bold, Daz, TIDE).

Lipase - Unilever (Persil), P&G (Ariel).

Cellulase - P&G (Ariel, TIDE).

Toxicity tests found included inhalation and oral exposure tests, and repeated dose toxicity, all using rats, as well as eye irritation tests using rabbits.[27]

24. HERA Risk Assessment www.heraproject.com/RiskAssessment.cfm?SUBID=14
25. Smith GS, Neumann AL, Gledhill VH and Arzola CA (1973). Effects of soluble silica on growth, nutrient balance and reproductive performance of albino rats. J. Animal Sc. 36 (2): 271-278 cited in HERA Risk Assessment www.heraproject.com/RiskAssessment.cfm?SUBID=14
26. Procter & Gamble, Summary of 91-day inhalation toxicity (rats). Personal communication by J. David Innis, Dec. 16, 1991 based on an unpublished report. (Cited in ECETOC report No.23, p. 33, 1993) cited in HERA Risk Assessment www.heraproject.com/RiskAssessment.cfm?SUBID=32
27. HERA Risk Assessment www.heraproject.com/RiskAssessment.cfm?SUBID=38

7. **Hydrogen Peroxide**

Hydrogen peroxide is produced in high volume and used for different applications, with a small proportion being used for household cleaning products.

Companies that use hydrogen peroxide include Reckitt Benckiser LLC (Dettol, Vanish, Mr. Muscle), Unilever (Domestos), P&G (Fairy) and S. C. Johnson (Mr. Muscle).

Tests have included acute and repeated dose inhalation studies, irritation and corrosivity studies including eye irritation.

"An 8 % solution was highly irritating and caused irreversible effects in the rabbit eye."[28]

8. **Linear Alkylbenzene Sulphonate**

Linear alkylbenzene sulphonate (LAS) is an anionic surfactant found in household detergents, such as laundry powders, laundry liquids, dishwashing products and all-purpose cleaners. Companies that use LAS include P&G (Gain, Tide).

An LD50 acute toxicity study in the UK in the 1980s noted: "clinical observations, at doses near the LD50 values (1980 mg/kg bw), were piloerection, hunched posture, abnormal gait (waddling), lethargy, decreased respiratory rate, ptosis, pallor of the extremities and diarrhoea. Recovery was apparently complete by day 4 for survivors. Deaths occurred within 24 hours after administration. Autopsy of rats that died revealed isolated cases of pallor of the kidneys or spleen. Terminal necropsy findings for survivors were normal.[29]

In the late 1970s, LAS was tested using rhesus monkeys dosed for 28 days by gavage and subcutaneous injection. The observed effects at different doses included diarrhoea and vomiting, but effects of "systemic toxicity" were not found.[30]

Studies for acute inhalation toxicity, acute dermal toxicity and skin irritation were also reported.

9. **Protease**

Subtilisins - a group of serine proteases (enzymes) of bacterial origin, produced by a fermentation process - are mainly used in detergents and household cleaning products to remove proteinaceous deposits and stains. Subtilisins are used in automatic dishwasher detergents and in all types of powder and liquid household laundry detergents, and in laundry bleach additives. They are also used in industrial cleaning and laundering products. The Subtilisin concentration in household detergent and cleaning products is very low and depends on the type of product.

Companies that use protease include P&G (Ariel, BOLD, DAZ, Fairy, GAIN), Reckitt Benckiser LLC (Finish, Vanish), Roche (Prudax), Unilever (Persil, SUN), Colgate Palmolive (Palmolive) and Jeyes (Easy).

Acute toxicity of one Subtilisin known as Savinase was tested by the oral and inhalation routes. An inhalation study in the 1970s exposed groups of rats to different levels of dust for four hours, after which they were observed for 14 days and those that had not already died were killed.

"Deaths occurring during exposure were confined to the group with the highest exposure level. Five animals died between two hours and fifty minutes and the end of the four hour exposure period. The macroscopic pathology revealed changes considered related to the effect of the dust of Savinase in the lungs of all animals that died as a result of exposure. These changes were typified by massive haemorrhage, congestion and oedema."[31]

Another Subtilisin was tested on rats, rabbits and guinea pigs. No clinical signs were apparent in the rats or rabbits during exposure to inhalation, but the guinea pigs showed "hyperactivity followed by sneezing, excessive salivation and laboured breathing ... Haemorrhage, pulmonary oedema and congestion were found in guinea pigs at necropsy."[32]

The object of another study was to determine the oral maximum tolerated dose of an ingredient called Alcalasein in dogs. In part A, two Beagle dogs were dosed daily by gavage for 4 weeks, at weekly increasing doses. The animals were observed clinically every day, and weights were recorded 3 times every week. In part B, two other Beagle dogs were dosed daily for 14 days at a constant dose level.

Clinical signs included "extremely loose faeces, frequently containing blood, loss of appetite, vomiting and weight loss." At the end of the dosing periods, the animals were sacrificed for examination.[33]

28. European Commission (2003) Summary Risk Assessment Report http://echa.europa.eu/documents/10162/590965ca-33e7-43a0-a109-3a9148870d07)
29. Huntingdon (1984), Research centre, Report No. 86546D/PEQ 7 AC, Unpublished results, cited in HERA Risk Assessment www.heraproject.com/RiskAssessment.cfm?SUBID=48
30. Heywood R, RW James, RJ Sortwell (1978), Toxicology studies of LAS in rhesus monkeys: (I) simultaneous oral subcutaneous administration for 28 days, Toxicology 11: 245-250, cited in HERA Risk Assessment www.heraproject.com/RiskAssessment.cfm?SUBID=48
31. Novozymes/Savinase/ MTM/PNi / F-9201974 / HRC No. NVO64/7818, 1978-01-24, cited in HERA Risk Assessment www.heraproject.com/RiskAssessment.cfm?SUBID=22
32. Richards DE, Scheel LD and Groth DH (1975). An evaluation of the inhalation toxicity of one commercial proteolytic enzyme preparation. Amer. Indust. Hyg. Ass. J. 36; 266-271 , cited in HERA Risk Assessment www.heraproject.com/RiskAssessment.cfm?SUBID=22
33. Novozymes/Alcalase GL/111382a / IRI Project No. 416788, Study No. 1038, May 1981, cited in HERA Risk Assessment www.heraproject.com/RiskAssessment.cfm?SUBID=22

10. Phosphonates

Phosphonates are a class of chelating (bonding) agents and scale inhibitors used in household cleaning products, personal care products, institutional cleaners and industrial cleaning processes. Uses in household cleaning products include laundry detergents, hand dishwashing liquids, and various hard surface cleaners.

Three acids, aminotris(methylene phosphonic acid) (ATMP), 1-hydroxyethylidene diphosphonic acid (HEDP) and diethylenetriamine penta(methylene phosphonic acid (DTPMP), were reported on in the HERA risk assessment.[34]

Companies that use phosphonates include Unilever (Domestos, GIF), P&G (Flash, DAZ) and Reckitt Benckiser LLC (Woolite).

We found numerous acute oral toxicity tests on phosphonates dating back to the 1960s, using rats and rabbits, dermal tests and eye irritation tests.

In the different tests, varying doses of the substance would be administered by gavage or by dermal application. Some of these resulted in the animals' deaths while others would be sacrificed for necropsy. Animals that died underwent necropsy for macroscopic examination. One test noted: "Clinical signs of toxicity included weakness in the first 2 hours after exposure, diarrhoea, salivation and tremors. All animals died at the highest treatment level."[35]

An eye irritation test of DTPMP acid in the 1970s noted: "severe initial pain, corneal cloudiness, necrosis in conjunctival sac, slight oedema and copious discharge, with slight improvement after 7 days."

In the same study, six rabbits were also observed after application of 0.1 mL of the test substance, followed by rinsing after 1 minute. "Again there was severe initial pain, necrosis in conjunctival sac, slight oedema, copious discharge and corneal cloudiness. The reaction had not completely cleared at study termination on day 7."

On the basis of this investigation, DTPMP acid was considered to be "moderately irritating" to the rabbit eye.[36]

The absorption, distribution and excretion of HEDP were also evaluated in rat, dog, monkey and rabbit studies in the 1970s.[37]

11. Sodium Carbonate (soda ash)

Sodium carbonate (soda ash) is used as a builder in detergent powders and tablets for water softening in the washing process. Sodium carbonate is also used in laundry additives, machine dishwashing products, surface cleaners, toilet cleaners and other household cleaning products.

Companies that use sodium carbonate include Colgate Palmolive (Ajax, Palmolive), Jeyes (Easy, Jeyes), P&G (Ariel, Fairy, FLASH, GAIN), Reckitt Benckiser LLC (Cillit Bang, Dettol, Finish, Harpic) and Unilever (CIF, GIF, SURE).

A series of acute toxicity tests in the 1980s involved whole-body inhalation exposures of rats, mice and guinea pigs to sodium carbonate fumes.

"The animals exhibited respiratory impairment when exposed for 2 hours to aerosols of sodium combustion products. Lesions in animals which died were limited to the posterior pharynx, larynx, anterior trachea, and in approximately 3 % of the animals, lungs. It should be taken into consideration that the particles from fumes of combustion products are very small and not comparable to particles that could be obtained by preparing an aerosol of crystalline sodium carbonate. The majority of the particles would then be rather in the range around 10 µm which would result in a lower exposure of the lower respiratory tract. Therefore the data obtained from fumes are of limited relevance for an evaluation of the acute inhalation toxicity of sodium carbonate dust."[38]

Eye irritancy tests were carried out in the 1980s using groups of rabbits who showed corneal opacities, iritis and conjunctivitis after exposure to sodium carbonate. Some of the research was carried out to show the effect of rinsing the substance out of the eye.[39]

34. HERA Risk Assessment www.heraproject.com/RiskAssessment.cfm?SUBID=30
35. Younger Laboratories (1967) Certificate of analysis. Toxicological investigation of Aminotri (methylphosphonic anhydride) SR450. (Handwritten anotation: "Dequest 2000"). Unpublished report for Monsanto, Project number Y-66-199, cited in HERA Risk Assessment www.heraproject.com/RiskAssessment.cfm?SUBID=30
36. Younger Laboratories (1971b) Toxicological investigation of Dequest 2060. Unpublished report for Monsanto, Project number Y-71-73 cited in HERA Risk Assessment www.heraproject.com/RiskAssessment.cfm?SUBID=30
37. Michael W.R., King W.R. and Wakim J.M. (1972) Metabolism of disodium ethane-1- hydroxy-1-disphosphonate (disodium etidronate) in the rat, rabbit, dog and monkey. Toxicol. Appl. Pharmacol. 21, 503-515 cited in HERA Risk Assessment www.heraproject.com/RiskAssessment.cfm?SUBID=30
38. Busch RH, McDonald KE, Briant JK, Morris JE, Graham TM (1983). Pathologic effects in rodents exposed to sodium combustion products. Environ. Res., 31, 138-147 cited in HERA Risk Assessment www.heraproject.com/RiskAssessment.cfm?SUBID=10
39. Murphy JC, Osterberg RE, Seabaugh VM, Bierbower GW (1982). Ocular irritancy responses to various pHs of acids and bases with and without irrigation. Toxicology, 23, 281-291 cited in HERA Risk Assessment www.heraproject.com/RiskAssessment.cfm?SUBID=10

12. Sodium Percarbonate

Sodium percarbonate is mainly used as a bleaching chemical in laundry detergents, laundry additives and machine dishwashing products. The pure product (100 %) is also available for consumers as a laundry additive. Sodium percarbonate may also be used in products for drain cleaning, multipurpose cleaning or for denture cleansing.

Companies that use sodium percarbonate include Colgate Palmolive (Ajax), P&G (GAIN) and Reckitt Benckiser LLC (Vanish).

Acute toxicity, skin and eye irritation tests using mice and rabbits were referred to in the risk assessments. In one test in the 1990s, rabbit eyes were exposed to sodium percarbonate in powder form for 96 hours and not rinsed. Necrosis of the conjunctivae was seen in one animal at 48 hours and in six animals at 72 and 96 hours. Sodium percarbonate was considered "highly irritating."[40]

13. Hydrotropes - Sodium Sulphate, Xylene / Cumene / Toluene Sulphonate

Hydrotropes are used as coupling agents to solubilize the water-insoluble and often incompatible functional ingredients of household and institutional cleaning products and personal care products. These hydrotropes are not surfactants but are used to solubilize complex formulations in water. They function to stabilize solutions, modify viscosity and cloud-point, limit low temperature phase separation and reduce foam. The HERA assessment consulted considered salts of toluene, xylene and cumene sulphonates.

Companies that use hydrotopes (Sodium xylene sulphonate) include Colgate Palmolive (Palmolive), Johnson (Brillo, Mr Muscle) and Reckitt Benckiser LLC. (Vanish).

In addition to acute toxicity and skin irritant tests, developmental and fertility testing in rats was reported. Calcium xylene sulphonate was administered via gavage to female rats and their clinical symptoms observed for up to 20 days after which they were killed (one animal died during the study) and their organs and foetuses inspected for defects. No treatment related effects were observed.[41]

40. Glaza SM (1990d). Primary Eye Irritation Study of Sodium Percarbonate in Rabbits. Sponsored by Solvay Interox. Hazleton Laboratories America Inc., Wisconsin, USA, report no. HLA 90903989 cited in HERA Risk Assessment www.heraproject.com/RiskAssessment.cfm?SUBID=6
41. Ruetgers-Nease Chemical, Inc., State College, Pennsylvania, USA. Developmental toxicity study in rats / 715-002. 1994g cited in HERA Risk Assessment www.heraproject.com/RiskAssessment.cfm?SUBID=24

Do tests like these go on today?

These examples show the nature and the enormous amount of testing of household product ingredients that has historically taken place in many different countries. But times change and many of these tests would not be carried out in the same way today. It is difficult to ascertain exactly what testing of ingredients continues in the UK in the 21st century.

An example of an experiment carried out on a paint product was revealed in a 2005 report by the National Anti-Vivisection Society (NAVS) on animal experiments at a contract research establishment in Scotland.[42] One test involved ten Sprague Dawley[43] rats being immobilised in tubes and then forced to inhale an aerosol spray of anti-fouling paint for three hours.

The liquid paint and air was passed through an electric spray gun, and then into an exposure chamber at a controlled concentration, filling the chamber with aerosolised red paint. Each animal was then loaded into a tapered restraint tube which fitted into the exposure chamber, so that only their noses were exposed. The rats were observed for reaction, and clinical signs recorded at 30 minute intervals. Because over 50 % of the animals died during dosing, the procedure was terminated after 3 hours. The survivors were found to be at the point of death, so were killed. The post mortem examination showed that 7 out of the 10 rats had reddened lungs.

Searching journals from 2013 and 2014, the OneKind researcher found much more recent research involving the use of animals to test household product ingredients. Among other experiments, rats had been used to assess the psychoactive chemical Toluene, found in many household products including adhesives and thinner, and often used by young people for its intoxicating effect.[44] Rats were also used to test the neurotoxic effect of ethylene glycol ethers mixtures widely used in industrial processes and in many household products – the substance was administered for four weeks prior to examining the rats' brains to observe the adverse effects.[45]

One study investigated the possibility of injury to rats' lungs by inhalation of Triclosan (TCS) a chemical compound used in household products as biocide,[46] while another examined the effect of orally administered perinatal bisphenol A (BPA) exposure on rat hypothalamic sexual differentiation.[47]

Products used as solvent and fragrance in common household products (e.g. limonene), were studied in a head out mouse bioassay. The mice were exposed to ozone-initiated monoterpene reaction products for an hour to assess the respiratory effects, allowing the researcher to observe acute upper airway (sensory) irritation, airflow limitation in the conducting airways, and pulmonary irritation in the alveolar region.[48]

One inhalation study of Propylene glycol (PG) involving USA and UK researchers, published in 2011, was intended to assess potential inhalation and systemic toxicity of PG in two animal species – rats and beagle dogs – before human studies were undertaken. Exposure was nose-only in rats, and via face mask with oropharyngeal tube in dogs. In the rats, the findings included "clinical signs of ocular and nasal irritation indicated by minor bleeding around the eyes and nose, and minimal laryngeal squamous metaplasia". In the dogs, changes in haemoglobin, red blood cells and hematocrit levels were observed. The researchers concluded that PG aerosol could be administered safely in "first-time-in-man" human exposure studies[49] as well as referring to a wide range of animal tests previously carried out on PG, as well as previous human exposure.

PG is another common household product ingredient, also found in medicines, cosmetics, food, toothpaste, shampoo, mouth wash, hair care and tobacco products. It is contained in Glade (S.C. Johnson), Mr. Muscle (S.C. Johnson), Oust (S. C. Johnson), Pledge (S. C. Johnson), Brillo (S. C. Johnson), Dettol (Reckitt Benckiser), Duck (S. C. Johnson), Glade (S. C. Johnson) and Shout (S. C. Johnson). Propylene Glycol Propyl Ether is used in GIF, Dipropylene Glycol in Duck (S. C. Johnson).

These experiments were carried out in Canada, Poland, Korea, USA, and Denmark. The PG study involved one UK laboratory. OneKind has not been able to establish whether there is a significant amount of household product ingredient testing in the UK or not. The Home Office was unable to answer our questions about testing statistics, and when asked for correspondence to do with project licences, invoked the secrecy clause provided at Section 24 of the Animals (Scientific Procedures) Act 1986.

42. NAVS (2005) Animal Experiments at Inveresk www.navs.org.uk/downloads/invereskreport.pdf
43. One of the non-transgenic strains of rat bred specifically for use in the laboratory.
44. Developmental Psychobiology (2014) 56 (4): 657–673 http://onlinelibrary.wiley.com/doi/10.1002/dev.21134/abstract;jsessionid=8CD1D3DBA8E0BF1D38F2727FD750F6C1.f01t02?deniedAccessCustomisedMessage=&userIsAuthenticated=false
45. Pharmacological Reports (2013) 65 (5): 1415–1421 http://www.sciencedirect.com/science/article/pii/S1734114013715019
46. The Journal of Toxicological Sciences (2013) 38 (3): 471-475 http://europepmc.org/abstract/MED/23719924
47. Neurotoxicology (2013) 36: 55-62 http://www.sciencedirect.com/science/article/pii/S0161813X13000417
48. Toxicology Letters (2014) 225 (3): 498 http://www.sciencedirect.com/science/article/pii/S0378427412013811
49. Non-clinical safety and pharmacokinetic evaluations of propylene glycol aerosol in Sprague-Dawley rats and Beagle dogs Toxicology (2011) 287 (1-3): 76-90 http://www.sciencedirect.com/science/article/pii/S0300483X11002095

What are the company policies?

Product manufacturers can invest in the development of non-animal tests and it is fair to say that many already do so. OneKind searched on the internet for animal testing policies of Procter & Gamble, Unilever, S.C. Johnson, Colgate Palmolive, Jeyes Ltd., Reckitt Benckiser LLC., and Roche. OneKind also sent email correspondence in spring 2014 to each of them to request information on which product ingredients have required animal testing since the EU REACH legislation (see below) came into force, but no response was received.

The general message was that the companies had reduced the amount of safety testing on animals and a number said they had invested in the development of non-animal alternatives and used existing data as far as possible. The main reasons given for continuing with testing were that it was required by law in a number of countries and that it could be necessary in the name of "innovation".

Here are some extracts from the company websites.

Proctor & Gamble

"We're committed to eliminating research involving animals."

"Today, we complete more than 99 % of all safety evaluations without testing on animals. The remaining tiny percentage comes from studies required by law or in cases where there are no alternatives available."

"We don't test product ingredients on animals, except in rare cases where regulations still demand animal data, or when no alternatives exist."

"While many companies no longer test their finished product, the fact is that safety information for most commonly-used ingredients in products today have been evaluated for safety through animal studies." and

"We've shared our alternatives research broadly in more than 400 scientific publications and routinely present our findings at scientific meetings and workshops."[50]

Unilever

"We are fully committed to eliminating the need to do any animal testing, whilst also ensuring that we can continue to innovate and develop new and safe products."

"The vast majority of our products reach consumers without testing any of their ingredients on animals."

"We do not test finished products on animals unless demanded by the regulatory authorities in the few countries where this is the law. In such cases, we try to convince the local authorities to change the law. Where some testing of ingredients is required by law or currently unavoidable, we aim to minimise the number of animals used."

"Unilever does not undertake animal testing, or commission others to do testing on its behalf, unless it is necessary to meet its health, safety and environmental obligations or it is demanded by government regulators or other official bodies."[51]

S.C. Johnson

"At SC Johnson, we've given a lot of thought to ending animal testing. We're not there yet, but we're trying. Because our products are used by families globally, we see an important need for toxicological studies that ensure they can be used safely and with minimal impact on the environment. Also, SC Johnson must comply with the stringent legal and regulatory requirements of countries around the world that require, by law, testing for certain products."

"Our first step is that where possible we use ingredients that have already been tested, so that we can avoid additional testing but still know the ingredients' human health and environmental impact."

"This issue is bigger than a single company and what we choose to do, because in many cases our choices are affected by legal requirements."

"We realize that some companies say they 'don't test on animals.' Frankly, we are skeptical, but even if the claim is true, it may mean simply that they aren't doing anything new. New product innovations – which can for example offer reduced environmental impact – may require testing because of using new chemicals or using them in new ways. A company that isn't innovating may not have this need, although it will still have to comply with new legal requirements that may entail animal testing.

"Other companies that claim they do no animal testing may also simply be obscuring the facts. It doesn't necessarily mean the ingredients they use haven't been tested – in fact, it is likely that they have. The vast majority of chemicals used in products will have been tested for toxicity. But some companies skirt this issue because their raw materials were tested by the suppliers they purchase from, or from other suppliers that those suppliers use. So their claims are based solely on whether they themselves tested a particular product formulation...not whether there was testing in the product's history.

"At SC Johnson, we care about honesty and transparency in our claims. So, we won't make broad, sweeping claims that imply more than is true."[52]

Colgate Palmolive

"We are committed to work toward the elimination of laboratory safety testing using animals."

"Currently, over 99 percent of internal requests for safety assessment of our products are addressed by using available databases and non-animal alternatives."[53]

Jeyes Ltd.

Jeyes Ltd. did not have a section on animal testing on its website.[54]

Reckitt Benckiser LLC

"Reckitt Benckiser will not use animal testing on any of our products, or on any raw materials, unless indicated by national or international regulatory authorities. Reckitt Benckiser will actively support the development, validation, use and acceptance of alternative methods that reduce, refine or replace the use of animals in safety evaluation."[55]

Roche

Roche did not have a section on animal testing on its website.[56]

OneKind believes that all companies should be transparent about the extent to which animals are used for testing ingredients in their products, and should be prepared to answer detailed questions from researchers and consumers. Investment in non-animal testing must not be left to the discretion of commercial companies, but for consistency – to protect all animals equally – must be provided for by legislation.

50. Procter & Gamble Policy, Practices, and Progress on Research Involving Animals www.pg.com/en_UK/downloads/sustainability/pov/PG_Animal_Research_ENG.pdf
51. Unilever website www.unilever.com/sustainable-living-2014/our-approach-to-sustainability/responding-to-stakeholder-concerns/developing-alternative-approaches-to-animal-testing
52. SC Johnson Point of View on Animal Testing www.scjohnson.com/en/press-room/points-of-view/01-01-2010/Animal.aspx
53. Colgate Palmolive Product Safety Research Policy www.colgate.com/Colgate/US/Corp_v2/LivingOurValues/Sustainability/RespectForPeople/RespectForConsumers/AssuringProductSafety/product_safety.pdf
54. www.jeyes.com
55. Reckitt Benckiser Global Policy Statement on Animal Testing www.rb.com/documentdownload.axd?documentresourceid=140
56. www.roche.co.uk

TESTS BY THE MILLION

How much animal testing takes place in the UK?

In 2013, OneKind asked the Home Office which ingredients used in household products, whether already on the market or likely to enter the market, were tested on non-human species in the UK. We also asked how many animals were used for the purposes of testing household product ingredients. The Home Office told us:

”We do not hold the published or potentially published information requested and we also do not hold the details of the chemicals tested or to be tested. The latter is unknown, because in most cases they depend on future contracts not yet made with the organisations.

“Information on chemicals tested and outcomes is held at the establishments and open to inspection, but we do not require all of that data, which would be both voluminous and also much of it commercial-in-confidence, to be submitted to us.”[57]

The 2013 animal research statistics from the Home Office[58] reveal that 4.12 million scientific procedures were started in the UK, an increase of 0.3 % (+11,600 procedures) compared with 2012. Of these procedures, 2.02 million (49 %) were performed for purposes other than to breed genetically modified animals and animals with a harmful genetic mutation (HM), a decrease of 5 % (-111,600 procedures) compared with 2012. The remaining 2.10 million procedures (51 %) were undertaken to breed GM and HM animals, an increase of 6 % (+123,200 procedures).

There were no tests carried out for cosmetic products and no experiments carried out on great apes (gorillas, orangutans or chimpanzees) in line with UK bans on such testing.

There were no animals used to test finished household products and the number of animals used to test ingredients was not recorded.

Mice, fish and rats were the most commonly used species in 2013, with 3.08 million procedures (75 %) undertaken on mice (+18,294 compared with the previous year), 507,373 (12 %) on fish (+6,543) and 266,265 (6 %) on rats (-12,121). For the remaining species, there were increases for guinea pigs (+13,602); sheep (+2,919); rabbits (+1,233); pigs (+350); gerbils (+279); non-human primates (+216) and reptiles (+183). There were falls for the following species: birds (-13,259); amphibians (-3,338); cattle (-1,167); goats (-969) and hamsters (-354). Dogs, non-human primates, cats and horses (i.e. specially protected species) were used in 0.4 % of all procedures, with a combined total of 16,800 procedures.

The numbers of procedures for toxicology studies decreased by 0.5 % (-2,000) to 375,000.

There were 2,672 project licences in force at the end of 2013 compared with 2,717 at the end of 2012, a slight decrease. The number of certificates of designation in force authorising places where work was carried out was 174 at the end of 2013, remaining fairly stable compared with the 176 certificates in force at the end of 2012. The number of personal licences in force increased to 16,112 at the end of 2013, compared with 14,875 at the end of 2012.

In the UK Home Office Statistics, data on the use of animals for toxicological or other safety/efficacy related purposes are classified according to the nature of the substance tested. ”Household” is an individual category under this heading but it is not possible to ascertain whether this refers to finished products only, although that is the general assumption. This lack of clarity is unhelpful.

OneKind believes that the UK animal research statistics should include clearly categorised information about procedures carried out for the purpose of testing both finished household products and ingredients.

How is animal testing regulated in the UK?

The use of animals in experiments and testing in the UK is regulated under the Animals (Scientific Procedures) Act 1986 (ASPA). ASPA was revised by the Animals (Scientific Procedures) Act 1986 Amendment Regulations 2013, to transpose European Directive 2010/63/EU on the protection of animals used for scientific purposes. The revised legislation came into force on 1 January 2013.

ASPA is implemented by the Home Office in England, Scotland and Wales and by the Department for Health, Social Security and Public Safety in Northern Ireland.

Three licences are required by the ASPA before testing on animals is permitted:

- a personal licence for each person carrying out procedures on animals
- a project licence for the programme of work
- an establishment licence for the place at which the work is carried out

A project licence will only be granted after the Home Office has weighed the likely adverse effects on the animals against any benefits likely to accrue as a result of the project. With regard to safety testing, the benefits are considered to be the protection of humans, animals and the environment. In the case of cosmetics, the testing of both finished products and ingredients was imposed because the substances were not thought to confer sufficient benefit to outweigh the harms caused to animals by safety testing. Many people believe the same principle should be applied to household products for which, as we have seen, hundreds if not thousands of ingredients have already been tested, and alternatives are constantly being developed where resources and/or funding are made available. However, alternatives to animal use are still regarded as the exception rather than the rule under many circumstances and this needs to change, to improve prediction of human safety, as well as eliminating animal suffering.

Guidance on the Operation of ASPA[59] was published on 13 March 2014. The guidance is aimed at holders of establishment licences, project licences and personal licences and new licence applicants and explains how the Act is administered and enforced.

As part of the licensing process, Article 43 of EU Directive 2010/63 (see below) requires publication of non-technical summaries (abstracts from project licences granted under ASPA) and the UK summaries can be accessed on the Home Office website.[60]

Unfortunately, the summaries do not make the purpose of the procedures clear to the general reader or consumer, meaning that the quest for accurate information remains a complex one.

OneKind believes that the non-technical summaries of project licences should indicate the purpose of the research so that consumers and researchers can understand the justification for using animals.

How does EU law affect animal testing?

European Directive 2010/63/EU on the protection of animals used for scientific purposes establishes revised measures for the protection of animals used for scientific purposes, across all Member States. These include a requirement for information sharing, the use of alternatives where possible and thematic reviews to ensure progress.

Aspirations towards these goals are expressed in other legislation covering biocides,[61] classification,

57. Letter from Home Office Animals in Science Unit 13 August 2013
58. Annual Statistics of Scientific Procedures on Living Animals 2013 Home Office July 2014 https://www.gov.uk/government/statistics/statistics-of-scientific-procedures-on-living-animals-great-britain-2013
59. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/291350/Guidance_on_the_Operation_of_ASPA.pdf
60. https://www.gov.uk/government/collections/non-technical-summaries-granted-during-2013
61. Regulation (EU) No 528/2012

labelling and packaging of substances and mixtures,[62] detergents[63] and so on.

In many cases, EU Directives and Regulations are not detailed enough to cover all possible testing requirements for different types of product, or the different ways in which they are used. In an attempt to standardise the approach to testing, and to help manufacturers and suppliers comply with the law, a number of organisations provide detailed guidance on which tests should be done, and how the results should be interpreted. For example, the European Commission publishes Technical Guidance Documents on the testing requirements for biocides and for the information requirements for compliance with EU chemicals legislation (REACH). Manufacturers or suppliers may also consult with a regulatory body (such as the UK Health and Safety Executive for chemicals (HSE), or the Medicines and Healthcare Products Regulatory Agency (MHPRA) for medicines to obtain advice on the acceptability of particular tests. Such advice is not legally binding.

However, EU law also creates a major source of animal testing, with particular relevance to household products.

The European REACH regulation (Registration, Evaluation, Authorisation and Restriction of Chemicals),[64] which came into effect in 2007, aimed to give the chemicals industry greater responsibility for managing risks and providing information, shifting the burden of proving safety from government to industry. The main objectives of the new legislation were to promote the safe use of chemicals, to improve the protection of human health and the environment from hazardous substances, to enhance the competitiveness of the European chemical industry and to increase transparency with regard to information on chemicals.

Everyday materials such as detergents, air fresheners, bleach, stain removers, polishes, paints, ink and dyes, all contain chemicals which had not previously been formally assessed for safety, or had been assessed only by individual manufacturers. Plastic wrappers, floor and wall coverings, man-made fabrics and many other products contain chemicals that may be released during use or during waste disposal or destruction. (Pesticides, medicinal products and certain other types of substance are not covered by REACH as they fall under other legislation.)

REACH places an obligation on chemical companies to provide information on the biological effects of their products, obtained in many cases from tests on animals. Manufacturers or importers of chemical substances supplied in quantities of 1 tonne or more per year must register the substance, and in order to do so must submit a dossier of information on the chemical to the European Chemicals Agency (ECHA).

Effectively, REACH requires the review, testing (and re-testing) of all chemicals on the market since 1981. The problem is that this creates a vast Europe-wide chemical testing programme that requires the use of millions of animals, even though many of the chemicals have already been tested by the companies that manufacture them. Proposals for new animal tests under REACH have even been submitted by the same companies who have carried out previous animal tests on the same substance.

Lobbying by animal welfare groups achieved some improvements to the original REACH proposal, so that the numbers of animals were reduced to an anticipated 8 to 13 million, providing all currently available non-animal methods were fully utilised. Amendments included requirements for:

- Mandatory sharing of animal test data: companies registering the same chemical are obliged to share their data and, if animal testing is required by REACH, the tests will only be done by one of the registrants. Companies face penalties for non-compliance
- For higher tonnage chemicals (greater than 100 tonnes per year) testing proposals must be approved by the ECHA, before new tests involving animals may be performed. There is a 45-day period during which the public (including animal welfare organisations) may comment, challenge the need for the tests, or suggest alternatives. This process is crucial for reducing the number of animal tests. For example, since the start of the REACH process in 2009, the European Coalition to End Animal Experiments (ECEAE) has invested in toxicologists to comment on REACH testing proposals, including in–house scientists and external consultants. As a consequence of its comments, the ECEAE estimated in February 2014 that 17 animal tests - which would have involved over 18,000 animals – had been avoided. Despite its success, the ECEAE expressed disappointment that the main reason animal testing had been avoided was through companies withdrawing their testing proposals rather than an ECHA decision. The Coalition called on the agency to make the comments procedure more transparent and efficient.[65]
- Alternatives to animal testing are promoted. For example, Article 1 states that one of the objectives of REACH is the 'promotion of alternative methods for assessment of hazards of substances'. It is also stressed throughout the text that animal testing must only be undertaken as a last resort
- The ECHA is obliged to submit a report to the European Commission every 3 years on the implementation of non-animal test methods

The REACH registration process requires manufacturers to collate information on the substances that they manufacture or import, to assess the potential hazards. This information is added to a registration dossier sent to ECHA. It is compared against the information requirements outlined in Annexes VI to X of REACH, which specify the information required for the different tonnage bands. Further information may be required and animal testing may be used to obtain it.

Article 13(4) of REACH stipulates that toxicological and ecotoxicological tests shall be carried out in compliance with EU Directive 86/609/EEC on animal protection.

A pre-registration facility was created to cover the transition to full testing of existing substances. Following registration of a substance, ECHA organises the companies that have already registered that ingredient into a Substance Information Exchange Forum (SIEF). The SIEF is responsible for compiling a dossier of safety data. If there are gaps in the data, animal tests may be deemed necessary to complete the dossier.

For a single substance, with no pre-existing data, and no attempt to minimise animal testing, registration and subsequent fulfilment of the information gaps could require over 5,000 animals, for example in reproductive toxicity testing which may use several generations of animals.

Nonetheless, some companies can, and do, take pains to comply with REACH without resorting to animal testing. In the UK, Marks and Spencer (M&S) is one such company.[66] M&S has a fixed-cut off date policy for both cosmetics and household products, and has not allowed animal testing on ingredients or finished products since 2006.

According to M&S,[67] the company contracts with a supplier to compile each dossier and send it to ECHA for registration. If it appears that animal testing will be necessary, based on the information obtained in the dossier, M&S will reformulate the chemical or choose other existing formulations with more comprehensive safety data which are unlikely to require animal testing. Cruelty Free International assists M&S with identifying chemicals that would not require further animal testing and audit suppliers.

Compiling dossiers is expensive, however, which can cause problems for smaller companies wanting to register chemicals; and when chemicals are sourced from overseas, for example China or the United States, it is more likely that they will be animal tested.

If a chemical has a new formulation, and there is no or little historical data on it, the dossier may be questioned. According to M&S, however, if a well-respected Senior Toxicologist can answer questions on the dossier, ECHA may well approve it with no animal testing requirement.

Despite the fact that REACH promotes the use of alternative methods without animals and states that animal use should be avoided whenever possible and only as a 'last resort', millions of animals continue to suffer in painful toxicity tests for new chemical substances. ECHA confirmed this in its 2011 report *The Use of Alternatives to Testing on Animals for the REACH Regulation*[68] – demonstrating that tens of thousands of animals were used in tests that could have potentially been avoided.

In its latest report,[69] ECHA also confirmed that at least 4,887 new animal tests had been conducted for REACH since its launch in 2007, with the number of tests more than doubling since 2009, from 1,849 to 4,887, and a three-fold increase in the number of reproductive toxicity tests carried out (which can use almost 1000 animals per test).

Previous estimates of the total number of animals used since REACH was enforced in June 2007 until its final 2018 deadline, range from 13-54 million.

The EU Ombudsman published a decision[70] in December 2014 following a complaint made by PETA (People for the Ethical Treatment of Animals) who claimed that ECHA had not been enforcing animal testing rules strictly enough. Specific examples included over 100 skin tests carried out on animals even though validated non-animal methods were available and a similar number of animal tests being carried out without prior approval.

62. Regulation (EC) No 1272/2008
63. Regulation (EC) No 648/2004
64. Regulation (EC) No 1907/2006
65. http://www.buav.org/article/1521/buav-claims-18000-animals-saved-through-reach-testing-proposals-process
66. Another UK company that has steadfastly held out against being obliged to carry out or commission any animal testing is Lush, although it does not make household products.
67. M&S Senior Toxicologist, personal communication, 7 July 2014
68. https://www.echa.europa.eu/documents/10162/13639/alternatives_test_animals_2011_en.pdf
69. http://echa.europa.eu/documents/10162/13639/alternatives_test_animals_2014_en.pdf
70. http://www.ombudsman.europa.eu/cases/decision.faces/en/58549/html.bookmark

ECHA acknowledged the decision and its duty to review and prohibit animal tests more effectively in future, also agreeing to report failures to uphold the 'last resort' rule of REACH regarding animal tests.

Are there any alternatives to animal tests?

The fact that companies such as M&S can operate fixed-cut off dates and avoid animal testing under REACH highlights the fact that that animal testing for household products is often unnecessary. Companies can use existing safe ingredients, and when new ingredients are required, approved modern and humane techniques are available. These techniques can be safer, more reliable and more effective.

Useful alternative approaches include:

- Isolated cells and tissues
- Toxicogenomics - a new sub-discipline of toxicology that provides a more complete picture of how cells respond to ingredients. This approach is expected to make the process of ingredient safety assessment more efficient and precise
- Computers and mathematics to model biological processes and predict the effects of chemicals and drugs
- Designing experiments for human volunteers
- Simple organisms, such as bacteria, to study basic biological processes
- Exploring new advanced technologies such as robotics, molecular techniques, tissue engineering and 'organs-on-microchips'
- In vitro tests (such as the neutral red uptake assay or the silicon microphysiometer test) on human tissues, culture tests and in vitro skin and cornea equivalents
- Not doing the experiment at all. Many tests can be avoided through more critical ethical review

For example:

Skin irritancy: Rabbits are an extremely poor predictor of human dermal response. Additionally, shaving the skin means that there is already an initial irritation on top of the chemical irritation - something that would not be present in humans. An excellent artificial human skin (Corrositex) has been developed, in addition to the possibility of using in vitro skin fragments, both of which provide far more accurate and reliable results.

Eye irritancy tests: Superior methods have been available for years, including artificial cornea-like 3-D tissue structures produced from human cells, and eye cells grown in culture. Rabbits have fewer tear ducts than our own, so they are unable to 'cry out' noxious substances as we do. Similarly, they have no blink reflex and are therefore unable to 'blink out' the chemicals. This inevitably means that eye irritancy tests cause rabbits excruciating pain.

Is it possible to find genuinely cruelty free products?

To market a product, a company must demonstrate its safety, but this can be done by using approved non-animal tests and combinations of existing ingredients that have already been established as safe for human use. It has been estimated that there are over 10,000 ingredients already proven safe for use.[71] The good news is that today a multitude of cruelty-free household products are available practically anywhere in the UK, and are genuinely not tested on animals.

The most reliable consumer aid is the Leaping Bunny, the internationally recognised mark of the Humane Household Products Standard.

Launched in the 1990s, the Standard sets out the criteria for certification under the Leaping Bunny mark. It is the only international third-party certification programme that enables consumers to easily identify and purchase household products (as well as cosmetics and personal care items) that have not been tested on animals. The Standard was developed by leading international animal protection organisations and is managed in the UK by Cruelty Free International (CFI)[72] and in Europe by members of the European Coalition to End Animal Experiments (ECEAE).[73]

To become approved a company must no longer conduct or commission animal testing and must apply a verifiable fixed cut-off date - an immoveable date after which none of its products or ingredients has been animal tested.

Each company must be open to an independent audit throughout its supply chain to ensure that it adheres to its animal testing policy and the strict criteria of the Standard.

Three UK companies that comply with the Humane Household Products Standard are M&S, Astonish and the Co-Operative.

71. Cruelty Free International consumer information www.gocrueltyfree.org/consumer/faqs
72. http://www.crueltyfreeinternational.org
73. http://www.eceae.org

M&S guarantees "that none of the individual ingredients in our beauty or household products is tested on animals either, starting from a fixed cut-off date of January 2006."[74]

Astonish has a fixed cut off date of 31 December 1995 and states that it has never tested on animals.[75]

The Co-Operative operates a fixed cut off date of 1997 for its entire household product ranges.

A selection of cruelty-free household product brands can be found on the OneKind website.[76]

What should consumers and citizens do?

As we have seen, consumers can choose to seek out cruelty-free products and only purchase those as a matter of personal choice. But not everyone is aware of the animal welfare issues and, given the scale, the severity and the secrecy surrounding household product ingredient testing in the UK, OneKind believes that consumer power simply is not enough.

We see legislation as the only way to end the uncertainty and the suffering.

OneKind calls on the UK Government and all political parties to honour their commitments to animal welfare and introduce a meaningful ban on all household product testing, including ingredients, immediately. Concerned citizens can support this call by writing to their local Members of Parliament and to the Home Office Minister responsible for animals in science regulation. Contact details are available on the OneKind website.[77]

74. M&S website www.corporate.marksandspencer.com/plan-a/stories/fashion-and-home/we-pass-the-test-on-animal-testing
75. http://www.astonishcleaners.com/cruelty-free.html
76. http://www.onekind.org/live_onekind/household_products
77. http://www.onekind.org/take_action/campaigns/come_clean_on_cruelty /

INCOMPLETE PROPOSALS ARE NO SOLUTION

What should be covered by new UK legislation?

The UK Government has come under sustained pressure to end all animal testing for household products in recent years and there have been successive Government commitments to do so. In 2010, an undertaking in the Coalition Programme for Government to "End the testing of household products on animals and work to reduce the use of animals in scientific research"[78] gave the Government scope to cover the testing of ingredients.

There is currently no authoritative definition of "household product" in UK or EU legislation, but in 2011 the Parliamentary Under-Secretary at the UK Home Department, Lynne Featherstone MP stated:

"For the purposes of the proposed prohibition on testing of such products on animals we plan to apply the definition of "substances used in the household" used for reporting purposes in the Statistics of Scientific Procedures on Living Animals published annually. This includes all products that are primarily intended for use in the home, including detergents and other laundry products, household cleaners, air-fresheners, toilet blocks, polishes, paper products such as infant nappies, paints, glues (and removers), other furnishing and DIY products and household pesticides.

The Minister added:

"The prohibition will apply to both finished household products and their ingredients although in practice mainly the latter are tested. We are working towards delivering the prohibition through the conditions of licences issued under the Animals (Scientific Procedures) Act 1986 and will announce the outcome as soon as this work is complete."[79]

On Thursday, 12 March 2015 the Government announced its intention to implement a ban on the testing of household products on animals, together with a 'qualified ban' on animal testing ingredients.

Minister of State for Crime Prevention Lynne Featherstone MP stated:

"I can today announce the Government's intention to ban the testing of household products in animals with a qualified ban on the testing of ingredients which are primarily intended for use in household products.

"Where testing of ingredients is required for regulatory purposes, we will permit this but require retrospective notification. Where such testing is not required for regulatory purposes, we will require a prospective authorisation, specific to the particular proposal. We will apply a robust harm-benefit analysis to any such applications which we expect to be few."

OneKind welcomed the fact that the government, having originally committed to reform in 2011, had finally made its position clear.

78. The Coalition: our programme for government Cabinet Office, London May 2010 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/78977/coalition_programme_for_government.pdf
79. HC Deb, 28 March 2011, c79W

However, the impact is likely to be minimal unless ingredients are explicitly covered - given that Government statistics (2011-13) showed that no animals were used to test finished household products in the last three years.

There are grave concerns about how the "qualified ban" on ingredients testing would be implemented in practice. It will include chemicals for which more than 50 % is intended or expected to be used as ingredients in a household product at the time of testing, but the final "end uses" of a chemical substance may be unclear at that stage. OneKind believes that companies must be absolutely transparent about the use of the final product when applying for licences to test chemicals.

In addition, the ban will not extend to chemical ingredients tested on animals to satisfy other legislation such as the EU Chemicals Regulation (REACH) - companies will simply have to notify the Government after the animal tests have been done. Although the Government estimates the number of tests to be very low, this can be a significant loophole.

OneKind and other animal welfare organisations see no point in banning the testing of finished household products – which has dwindled to zero in the UK in any case – if the hundreds of available ingredients can still legally be tested on animals in the UK. The proposed ban could simply act as a smokescreen, allowing the Government to appear to be taking an ethical stance on an issue of great public concern.

Can Government use its licensing powers to end animal testing?

One way to end the use of animals for testing household products would be for the UK Government to introduce of a policy of not licensing any such tests.

In 2012, in its draft guidance to the revised UK animal testing legislation, the Government stated:

"We will not grant project licences for work [...] using any animals for [...] testing cosmetics or household products."[80]

However the final Guidance, issued in March 2014, no longer expressed the same commitment.[81]

OneKind is concerned that a policy ban based on the issuing of project licences for animal procedures will be too weak and open to loopholes. We believe that comprehensive legislation covering household product ingredients is the only option, and is urgently needed.

Note on research

In addition to the original product research, the OneKind researcher reviewed Risk Assessment reports published by the European Chemicals Agency (ECHA) and by the HERA (Human & Environmental Risk Assessment) project.

Bibliographic research was carried out by using three databases - Pubmed, Biological Abstracts, and ESTAR, the Electronic Storage and Retrieval System of the British Library (London) - to retrieve references from journals, review annuals, monographs, meeting proceedings, books, and reports.

Using the search engines, entries that contained the names of the INCI ingredient name, product name (e.g. 'paint', 'cleaner') company and animal (the types of animals most commonly used in toxicology tests - 'rat', 'mouse', 'dog'). Different combinations of names were used in order to find any possible relevant scientific article on toxicology testing.

Additionally, the Toxnet database was searched. Toxnet[82] is a group of databases from the United States covering chemicals and drugs, diseases and the environment, environmental health, occupational safety and health, poisoning, risk assessment and regulations, and toxicology. It is managed by the Toxicology and Environmental Health Information Program (TEHIP) in the Division of Specialized Information Services (SIS) of the National Library of Medicine (NLM).

80. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/116860/quick_start_guide.pdf
81. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/291350/Guidance_on_the_Operation_of_ASPA.pdf
82. www.toxnet.nlm.nih.gov

HumanKind. AnimalKind. **OneKind**

50 Montrose Terrace, Edinburgh EH7 5DL
Tel: 0131 661 9734 email: info@onekind.org Registered Charity No. SC041299

www.onekind.org