



# Sodium Lauryl Sulfate

Dr. Cole Woolley, B.Sc., Ph.D.

*Neways' continual pursuit to offer the safest and most effective personal care and cosmetic products is based on the costly efforts to "research the research".*

*Neways' scientists use credible scientific research to create and modify Neways' personal care and cosmetic product formulations. Neways' scientists have labeled some ingredients, such as sodium lauryl sulfate, as "potentially harmful" due to effects reported in scientific literature.*

*Please note: the potentially harmful effects of SLS in this article include eye irritation, skin irritation, mouth irritation, membrane alterations and protein denaturing transformations. Due to genetic variations, not everyone is adversely affected by exposure to SLS. Therefore, statistically speaking, exposure to SLS could be potentially harmful to humans.*

## **Sodium Lauryl Sulfate**

Sodium Lauryl Sulfate (SLS), also known as Sodium Dodecyl Sulfate (SDS), is an anionic surfactant that is one of the most commonly used chemicals in car wash soaps, garage floor cleaners and engine degreasers.

Surprisingly, this compound is also found in shampoos, soaps, and toothpastes. Anionic surfactants are the most common class of surfactants used in household, personal and industrial cleaners. This is because of their ability to solubilize fats and oils, lower the surface tension of aqueous solutions, or form microemulsions.<sup>1</sup>

However, Sodium Lauryl Sulfate has harmful effects on the eyes, skin, mucosa tissue of the mouth, and possibly even such organs as the brain, heart, spleen, and liver.

## **Eye Irritation**

SLS is harmful to the eyes in a variety of ways. One manifestation of its toxic properties in the eyes is that it extends the healing time of the corneal epithelium. Studies have shown that in both mechanically and chemically created corneal lesions, SLS slows epithelial healing to 8-10 days, compared to the normal 2 days.<sup>2</sup> If the cornea is not able to heal efficiently, tissue damage and infection may result. Many changes in the eye are reflected in protein alterations, and it is possible that long-term use of products containing SLS could cause cataract formation. One study incubated embryonic chick retinal cells in SLS and found that the axonal growth that ultimately would form the retina was completely stunted.<sup>3</sup> SLS can be harmful to both adult and juvenile eyes and should be avoided in products such as shampoos and soaps.

## **Skin Irritation**

SLS and other anionic surfactants are broadly accepted as potent irritants to human epidermal tissues. In fact, the majority of adverse skin reactions to personal-care products are thought to be caused by the surfactants contained in them.<sup>4</sup> SLS has such well-known irritant properties that it is used often in clinical studies to deliberately irritate the skin. One study, aimed at determining the differences in irritability by sex

and race, stated that measuring the skin water vapor loss due to SLS was a useful method in assessing the damaging effects of irritants on the skin.<sup>5</sup> Other studies have shown similar findings.<sup>6</sup> The irritant effects of SLS have been shown to cause allergic reactions in many people. In a study of 242 patients suffering from eczematous dermatitis, many allergic reactions to SLS were observed.<sup>7</sup> Repeated exposure to SLS can cause chronic irritant contact dermatitis, a disease that has become common in the workplace.<sup>8</sup> Research has found that SLS compromises the overall integrity of the skin barrier to a great degree. Scientists recommend that different detergents, which affect the overall integrity of the skin less, should be used.<sup>9</sup>

## **Mouth Irritation**

SLS not only irritates the epidermis, but has also been found to be extremely harmful to oral mucosa. This is particularly disturbing because of the fact that SLS is an ingredient often found in toothpastes. Studies have found that SLS is a harmful denaturant to oral tissues. Many people suffer from oral mucosa diseases that may have been caused in part by SLS and which are definitely exasperated by SLS-containing products. Double-blind studies have found that the denaturing effect of SLS on the oral mucin layer has induced an increased incidence of recurrent aphthous ulcers.<sup>10</sup> Other research states that people with salivary hypofunction should take precautions such as refraining from smoking and avoiding toothpastes containing SLS.<sup>11</sup>

## **Widespread Effects**

SLS, as an anionic surfactant, increases membrane permeability by its ability to penetrate lipid membranes. Increasing membrane permeability makes the body's cells more susceptible to exogenous chemical insults. This means cells of the body in any area could ultimately be harmed.<sup>12</sup> As SLS penetrates the epidermis, there is a possibility that it will harm important protective cells. One study found that the capacity of sodium lauryl sulfate to abrogate the function of epidermal antigen-presenting cells could be tumor promoting.<sup>13</sup>

Disturbing the function of the antigen-presenting cells can be extremely harmful to the body's immune response. SLS penetrates epithelium and has protein-denaturing properties. Since proteins are such an integral part of our cellular system, any changes can cause degenerative effects in our bodies. Research has found SLS to have a degenerative effect in absorption, metabolism, and excretion studies.<sup>14</sup> This surfactant can penetrate and persist in the cells of the brain, heart, spleen and liver. SLS, when present in shampoos, may cause protein changes that corrode the hair follicle and cause hair loss. With the potential for disturbance of such basic cellular processes, the effects of SLS can be harmful and disruptive to all areas of the body.

#### References

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## Neways' Position

A recent publication, produced by a relatively new competitor has attempted to discredit our decision not to use sodium lauryl sulphate and propylene glycol in our Hair Care and Personal Care products.

Neways makes these decisions based on the assessment of available evidence, or lack of it, and believes the decisions made are prudent and in the interest of the people who use our products ... our Distributors and their customers.

This competitor has offered a reward if someone can prove, with credible scientific studies, that SLS or Propylene Glycol are a *Serious Health Risk* excluding allergic reactions or irritations some people might have to an ingredient. Why does an ingredient have to be a serious health risk before a company should consider removing it from its products? One would think, if there was any risk at all, it would be considered worthwhile removing.

We must admit, we were surprised a competitor feels they have to resort to these types of tactics.

Neways has always taken the view we will 'research the research' and we will not use ingredients which, in our opinion, are potentially harmful. This is an ongoing process. Ingredients, which are considered 'safe' today by the scientific community, may not be tomorrow. Asbestos was a revolutionary product when first discovered and was used for many years before research proved it to be otherwise.

Neways' position - if we are in doubt, we take it out.

We continue to get great feedback from people who use Neways products. At the end of the day, it is their opinion that matters most.