

Composition of automotive screenwashes sold in the United Kingdom:

How many contain ≥ 3% w/w methanol?

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Background

In 2015, the European Chemicals Agency (ECHA) and its Committee for Socio-Economic Analysis considered a request from Poland to restrict the placing on the market (for supply to the general public) of automotive screenwashes that contained methanol at concentrations at or above 3% by weight.

The proposed restriction originated from concerns over adults abusing screenwash fluids in parts of the EU. The proposed restriction was intended to reduce the risk of methanol poisoning from these screenwashes.¹

The United Kingdom (UK) National Poisons Information Service (NPIS) was invited to submit data by the UK Health and Safety Executive on the composition of UK products and the exposures reported.

Objective

To identify and report on the composition of automotive screenwashes currently sold in the UK.

Methods

The composition of automotive screenwashes was determined from data held on 264 products in the NPIS Product Data Centre. The Product Data Centre is accessible to all NPIS staff 24/7 and contains information on the composition of more than 175,000 products and is an invaluable aid in the provision of accurate advice on patient management.

Results

Methanol was present in 163 of 264 products (62%), isopropanol in 147 products (56%) and ethylene glycol in 107 products (41%). The majority (71%) of these 264 products contained various combinations of these chemicals.

Fifty-eight of 163 products contained < 3% w/w methanol, with most of these also containing ethanol (Table 1). 39 products contained ≥ 3% methanol but only 38% were co-formulated with ethanol. The exact methanol concentration for 66 products was unknown but all had concentration ranges reported on the product safety datasheet spanning 3%; 46 of these products also contained ethanol.

In general, as the methanol concentration increased, the number of products co-formulated with ethanol decreased.

Methanol concentration (%)	All products (n=163)	Co-formulated with ethanol (n=115) (%)
< 3%	58	54 (93%)
≥ 3%	39	15 (38%)
May contain ≥ 3% [†]	66	46 (70%)
[Possible total ≥ 3%	105	61 (58%)]

[†] Includes 56 products containing 1-5% (37 co-formulated with ethanol); 9 products containing 1-10% (8 co-formulated with ethanol); 1 product containing 1-3% (co-formulated with ethanol).

Table 1. Concentration of methanol and presence of ethanol in screenwash products sold in the UK.

Discussion

Almost two thirds of all screenwashes sold in the UK contain methanol, with 71% also containing ethanol at various concentrations. The presence of ethanol in these products may itself induce inebriation but its presence can also be protective as ethanol acts on the enzyme, alcohol dehydrogenase, to inhibit the metabolism of methanol.

Our data (along with NPIS exposure data) were provided to the Health and Safety Executive to aid the ECHA discussion of the proposal to restrict the concentration of methanol in screenwashes to < 3%.

Conclusions

One hundred and sixty three of 264 automotive screenwash products sold in the UK contain methanol; two thirds of these could potentially contain ≥ 3% w/w methanol and 61 were co-formulated with ethanol, thereby protecting those ingesting the product from methanol toxicity. If the product contains ≥ 3% methanol and does not contain ethanol (44 of 105 products), there is the potential for methanol toxicity to occur.

Reference

1. Annex XV restriction report. Proposal for a restriction. Substance name: methanol. ECHA, 17/03/2015.