

**ALKYLPHENOLS & ETHOXYLATES RESEARCH COUNCIL
COMMENTS ON PROPOSED REGULATIONS BY THE
NORWEGIAN POLLUTION CONTROL AUTHORITY
CONCERNING NONYLPHENOL, OCTYLPHENOL AND THEIR
ETHOXYLATES**

I. INTRODUCTION

The Alkylphenols & Ethoxylates Research Council (APERC) is pleased to submit these comments to the Norwegian Pollution Control Authority pertinent to the agency's proposed regulations concerning nonylphenol (NP), octylphenol (OP) and their ethoxylates.

Alkylphenols have been in widespread use for 50 years fulfilling a variety of needs in many key industrial sectors such as textiles, pulp and paper processing, paints and protective coatings and others. They are also used in cleaning products and detergents for home and institutional use, and in a variety of consumer products. They are clearly among the most versatile of chemicals and have a myriad of economically viable and socially desirable applications.

APERC acknowledges that under some circumstances, and at sufficient levels of concentration, alkylphenols can be toxic to aquatic life. However, the intrinsic toxicity of a substance should not be the basis for a comprehensive ban. Such bans are appropriate only for substances that pose a clear and present danger to human health or the environment, and that cannot effectively be managed. This is clearly not the case with alkylphenols, which pose no danger to human health, and at most, a marginal environmental challenge that can typically be effectively managed by proper wastewater treatment.

Norway has proposed a total ban on the manufacture, processing and use of NP, OP and their ethoxylates as well as products, but not "fixed products," containing these compounds. As discussed in the following comments, APERC does not believe such a drastic measure is called for because there is more than adequate evidence to document that these compounds can be used safely. APERC recognizes that there may be some uses of these compounds which, if not properly managed and treated, could result in discharge into the environment. However, there is simply no basis for an outright ban on all uses.

II. NORWAY'S PROPOSED BAN LACKS A SCIENTIFIC BASIS

Alkylphenols are among the most studied compounds with literally hundreds of tests available in the literature. The broad spectrum of studies available on alkylphenols makes it feasible to define environmental concentrations beneath which concern for human health or the environment is not warranted. The substantive data base confirms that these chemicals are biodegradable, do not build up in the food chain, and are almost totally removed from waste streams by well-functioning treatment systems.

Norway's ban appears to be predicated on the assumption that there is no safe level of exposure for these chemicals. This is simply not the case. Many government regulatory agencies in different countries have reviewed the data on these alkylphenols and in all cases they have calculated "no effect levels." For example, the European Union's risk assessment for NP reviewed the numerous studies on NP and calculated Predicted No Effect Concentrations (PNEC) for different environmental media.

As part of its review, the EU also reviewed the potential estrogenic properties of NP. The EU determined that to the extent estrogenic effects are a concern, they "may start to occur at around 10-20 µg/l." However, the EU recognized that since traditional toxicity end points are exhibited at concentrations lower than those potentially triggering estrogenic responses, and determined that protecting against these other toxic properties is sufficient to address any potential estrogenic concerns.

APERC maintains that the EU's assessment of NP is based on unnecessarily conservative assumptions and safety factors. It is further significant to note that the EU assessment of NP is considerably more conservative than the assessments conducted by the US Environmental Protection Agency and Environment Canada. However, what is most important is that these agencies were able to define a safe level for the environment and as a result are not advocating total bans on the use of these compounds. (A compendium of reports and papers reflecting some of the recent scientific literature pertaining to these chemicals can be found on our web site (www.aperc.org) and will be sent electronically via e-mail. Of particular significance is a recent comprehensive multi-generational reproduction study of OP, conducted by the premiere Research Triangle Institute (RTI) in North Carolina, which found no reproductive or endocrine-disrupting effects.)

III. THE PROPOSED RULE DOES NOT REFLECT APPROPRIATE COST-BENEFIT ANALYSIS

A key ingredient missing from the Norway proposal is recognition of the costs associated with banning the chemicals, or the disproportionate economic impact of a ban on different sectors of industry. In contrast, the European Union's chemicals policy prominently endorses a balanced approach to consideration of costs and benefits.

In the case of NP and NPEs, this is highlighted by the Risk Reduction Strategy (RRS) report drafted by Risk & Policy Analysts, Ltd, for the United Kingdom, the EU's rapporteur for nonylphenol. The report recognizes that the risks associated with NP/NPEs are distributed over a wide range of industries and that some of these are "responsible for a large proportion of the risk, while others contribute very little to the overall risk." By way of example, the risk strategy calculates that 45% of continental NP exposure is associated with I&I (industrial, institutional and domestic cleaning/detergent products), while only 0.002% is associated with emulsion polymerization." The total cost to EU industry of a complete ban on this class of chemicals, the RRS paper said, would be Euro 1.6 billion. However, the paper added, "the costs of the I&I sector are estimated to be less than 10% of the above costs (representing some 0.13% of annual turnover), while costs to emulsion polymerization would be approximately one-third of total costs."

It is our understanding that NP is not used in I&I in Norway, which suggests Norway's concern with NP is out of proportion to the presence of NP in the Norwegian environment. In any case, a comprehensive ban on the use of NP in emulsion polymerization makes little sense because this use is responsible for less than 0.002% of potential release to the environment.

In addition, the outright ban of these chemicals proposed by Norway does not consider their value to society, including some public health benefits that can be derived by their use. The RRS stated "it is worth noting that there are some uses of NP/NPEs which confer an environmental benefit over the current alternatives in sectors where an environmental limit value/EQS has been recommended." Two examples are:

- certain water-borne auto refinishing (paint) products, which have been developed to replace solvent-based paints that contain VOCs in response to the Montreal Protocol; and,
- use in fuel and oil where NPEs are employed in the production of detergents used to help meet vehicle emission standards.

In fact, the use of NPEs in fuels is estimated to result in less than 0.008% of the total NP burden in Europe. Moreover, banning this use of NPE likely would result in a negative impact on the environment.

Finally, Norway exempts "fixed products" from its ban, which are meant to be "goods" or objects like tires, bags *etc.* The perverse result of this distinction will be to permit import into Norway of products that were produced with these chemicals, while at the same time forbidding Norwegian industry to manufacture the same products. The result will be a loss of economic opportunity in Norway.

IV. THE PROPOSED RULE DOES NOT ADDRESS THE ISSUE OF SUBSTITUTES

The Norway ban does not allow for exceptions for use of these chemicals when viable substitutes are not available, or when available substitutes might present greater environmental issues of their own. This issue was highlighted in the RRS report that advocates derogation for the use of NPEs as an active ingredient in spermicidal products (*e.g.*, condoms) because there are no viable alternatives.

The RRS report likewise reviewed the use of these chemicals in pesticides and noted that while alternatives are available, since "pesticide approvals are based on toxicity and risk assessment of the formulation (as opposed to the active ingredient), any changes in the pesticide formulation will thus require the whole formulation to be re-tested and re-licensed." For this reason, the report concluded that "complete removal of NPE use from pesticides through marketing and use restrictions should be avoided owing to the costs associated with reformulation, re-testing and re-licensing."

Even the OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic, whose position on nonylphenol/nonylphenol ethoxylates APERC considers extreme, recognizes the need to consider the impact on the environment of alternatives. OSPAR contracting parties, including Norway, agreed “that care shall be exercised to ensure that replacement materials for the current uses of NP/NPE are less damaging to the aquatic environment.” The comprehensive ban proposed by Norway leaves no room for such care.

V. AT A MINIMUM, NORWAY SHOULD EXCLUDE USES WITH *DE MINIMIS* RELEASE POTENTIAL

The total ban that Norway proposes fails to recognize that there are several uses of products containing the subject alkylphenol compounds that do not result in consequential releases to the environment, even in situations where there are no management controls or where there is inadequate wastewater treatment capabilities. The EU risk assessment and associated RRS report reviewed many of these uses and in many cases concluded that there was no need to impose risk reduction measures. The RRS report states:

“In other sectors, investigation into the use of derogations is recommended where the use of NPEs in certain ‘closed loop’ applications results in minimal environmental exposure and where a ban would be disproportionately expensive,”

“Examples include the use of emulsion polymer coatings in the textiles, leather and paper industries, where no NPEs are discharged to water.”

There are many economically significant NP based-products and applications that result in no meaningful discharge to the environment. This is particularly noteworthy for the various derivatives of nonylphenol that may contain residual levels of NP. Since the scope of the proposed ban is directed at “products containing” these subject alkylphenol compounds, it is unclear whether the ban is intended to also apply to these derivatives.

APERC maintains that there is more than an adequate basis to conclude that these derivative products should not be covered by the proposed ban as they present little, if any, opportunity for release to the environment. As can be readily seen from Table 6.5 of the RRS report, there is essentially zero release from these derivatives.

An excellent example is tris(nonylphenol)phosphite (TNPP), a secondary antioxidant in polymer formulation that is widely used in the stabilization of natural and synthetic rubbers, vinyl polymers, polyolefins and styrenics. The negligible release potential from the use of TNPP is documented in the EU assessment reports.

While APERC maintains that Norway should abandon its ban on these compounds, if the action proceeds forward, it should be revised to clearly state that the ban does not apply to uses of NP, NPE, OP and OPE where there is *de minimis* discharge to the environment as well as to compounds that are derivatives of the subject chemicals. This exception should be especially appropriate for Norway where NPEs are used only in small quantities, and mostly in applications that do not have aquatic releases.

VI. NORWAY'S PROPOSAL IS INCONSISTENT WITH THE REST OF EUROPE

The Norwegian Pollution Control Authority attributes its action to the failure of voluntary efforts to phase out use of nonylphenol, octylphenol and their ethoxylates by 2000, as recommended by OSPAR. Citing survey results indicating the chemicals remain in widespread use in Norway, the Pollution Control Authority said it was obliged by OSPAR "to reduce or stop the use and discharge of the substances concerned."

But OSPAR did not recommend phase out of all uses of NP and NPEs or an outright ban of these chemicals by 2000. A paper presented by Sweden to the OSPAR Working Group on Point and Diffuse Sources December 11-15, 2000, and scheduled for presentation to the OSPAR Working Group on Priority Substances February 5-8, 2001, acknowledges that the initiative for dealing with NP and NPEs currently rests with the European Union's Risk Reduction Strategy. "It can be concluded that the EU draft proposal on a risk reduction strategy fulfills the requirements of PARCOM Recommendation 92/8," it said. The Swedish paper suggests OSPAR should consider "further monitoring activities," but it does not recommend an outright ban such as proposed by Norway. Thus, the purpose of the proposed ban as stated by Norway's pollution control authority to "fulfill the national aim and international agreements" has no basis.

Also, Norway included in its ban octylphenol (OP) and octylphenol ethoxylates (OPEs), chemicals that have similar qualities to NP and NPEs and which apparently were included for that reason. But currently there exists no EU environmental risk assessment or OSPAR background documents for OP or OPEs. Available evidence suggests strongly that the uses and environmental releases of OP are significantly different from NP. Great Britain has agreed to prepare the documentation for octylphenol, and may be able to present a paper addressing some of the attendant issues at the February OSPAR meeting, but a final product is unlikely to be available until later in the year. Hence, Norway's inclusion of OP/OPEs in its ban is premature.

APERC exhorts Norway to consider the potential impact of its unilateral action on the cohesiveness of Europe and as a trading partner with other non-European countries. One of the most obvious and important components of a unified European marketplace is a consistent regulatory regime in which enterprises all over the world seeking to do business there, are required to address one set of standards. If all of the member states pursue independent approaches to regulatory issues, the result will be a complex maze that defies analysis and discourages economic activity. APERC respectfully submits it is not in the interest of the EU or Norway to engage in activities that would lead to such a result.

In sum, APERC calls upon the Norwegian Pollution Control Authority to reconsider this proposed ban, and to pursue instead a regulatory approach in accord with the EU's Risk Reduction Strategy.