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**REVISED ENVIRONMENTAL ASSESSMENT****CHEVRON PHILLIPS CHEMICAL COMPANY LP**

Food Contact Notification

1. Date: May 24, 2006
2. Name of Applicant/Notifier: Chevron Phillips Chemical Company LP
3. Address: 10001 Six Pines Drive, Suite 4104
The Woodlands, Texas 77380

All communications on this matter are to be sent in care of Counsel for Notifier:

Catherine R. Nielsen, Partner
Keller and Heckman LLP
1001 G Street, N.W., Suite 500 West
Washington, D.C. 20001
Telephone: (202) 434-4140
Facsimile: (202) 434-4646
E-mail: nielsen@khlaw.com

4. Description of the Proposed Action

The action requested in this notification is to establish the clearance of the food-contact substance (FCS) that is a copolymer of styrene and 1,3-butadiene, where the copolymer has a styrene polymer content of 60-74%, for use in the fabrication of food-contact articles. With the clearance of this food-contact notification (FCN), the FCS will be used in contact with all food types under Conditions of Use A through H, as set forth in Tables 1 and 2, respectively, of 21 C.F.R. §176.170(c).

The subject resin offers several technical properties that make it useful in a variety of food-contact applications. In particular, it offers strength and toughness to articles into which the FCS is incorporated.

The Notifier does not intend to produce finished food packaging from the subject resin. Rather, the resin will be sold to manufacturers engaged in the production of food-contact articles. The types of finished articles the FCS will be used to make are included in the enclosed confidential attachment. Food-contact articles produced with the resin will be utilized in patterns corresponding to the national population density and will be widely distributed across the country. Therefore, it is anticipated that disposal of the subject resin will occur nationwide, with the material being land disposed, combusted, or recycled. According to the U.S. Environmental Protection Agency's 2003 update regarding municipal solid waste in the United States, 55.4% of municipal solid waste generally was land disposed, 14.0% was combusted, and 30.6% was recovered for recycling and composting.¹

¹ *Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures for 2003*, EPA 530-F-05-003, U.S. Environmental Protection Agency (5305W), Washington DC, 20460, April 2005.

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The types of environments present at and adjacent to these disposal locations are the same as for the disposal of any other food-contact material in current use. Consequently, there are no special circumstances regarding the environment surrounding either the use or disposal of food-contact materials prepared from the resin.

5. Identification of Substance that is the Subject of the Proposed Action

The FCS that is the subject of this Notification is a copolymer of styrene and 1,3-butadiene, which has a Chemical Abstract Service Index Name of "benzene, ethenyl -, polymer with 1,3-butadiene," and a Chemical Abstract Service Registry Number (CASRN) of 9003-55-8. The copolymer has a styrene polymer content of 60-74%.

The polymer is marketed under the trade name

6. Introduction of Substances into the Environment

Under 21 C.F.R. § 25.40(a), an environmental assessment ordinarily should focus on relevant environmental issues relating to the use and disposal from use, rather than the production, of FDA-regulated articles. Moreover, information available to the Notifier does not suggest that there are any extraordinary circumstances in this case indicative of any adverse environmental impact as a result of the manufacture of the resin. Consequently, information on the manufacturing site and compliance with relevant emissions requirements is not provided here.

No environmental release is expected upon the use of the subject resin to fabricate food-contact articles. In these applications, the resin is expected to be used as the basic polymer to fabricate all forms of food-contact articles, and will be entirely incorporated into the finished food-contact article. Any waste materials generated in this process, e.g., plant scraps, are expected to be disposed of as part of the packaging manufacturer's overall nonhazardous solid waste in accordance with established procedures.

Disposal by the ultimate consumer of food-contact articles produced by the subject resin will be by conventional rubbish disposal and, hence, primarily by sanitary landfill or incineration. The FCS is composed of carbon and hydrogen, elements that are commonly found in municipal solid waste. The proposed use of the FCS and the market volume (available in a confidential attachment to the FCN) show that (1) the FCS will make up a very small portion of the total municipal solid waste currently combusted (estimated to be 33 million tons or 14% of 236 million tons in 2003),² (2) the FCS will not significantly alter the emissions from properly operating municipal solid waste combustors, and (3) incineration of the FCS will not cause municipal solid waste combustors to threaten a violation of applicable emissions laws and regulations (40 C.F.R. Part 60 and/or relevant state and local laws).

Only extremely small amounts, if any, of the resin constituents are expected to enter the environment as a result of the landfill disposal of food-contact articles, in light of the

² U.S.EPA Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures for 2003; EPA530-F-05-003; 2005.

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Environmental Protection Agency's (EPA) regulations governing municipal solid waste landfills. EPA's regulations require new municipal solid-waste landfill units and lateral expansions of existing units to have composite liners and leachate collection systems to prevent leachate from entering ground and surface water, and to have ground-water monitoring systems. 40 C.F.R. Part 258. Although owners and operators of existing active municipal solid waste landfills that were constructed before October 9, 1993 are not required to retrofit liners and leachate collections systems, they are required to monitor groundwater and to take corrective action as appropriate. The lack of any leaching is especially true considering that the subject substances are high molecular weight polymers that contain only minute levels of extractable material even under conditions that greatly exaggerate environmental exposure conditions.³

7. Fate of Emitted Substances in the Environment

(a) Air

No significant effect on the concentrations of and exposures to any substances in the atmosphere are anticipated due to the proposed use of the resin. The polymers are of high molecular weight and do not volatilize. Thus, no significant quantities of any substances will be released upon the use and disposal of food-contact articles manufactured with the resin.

The products of complete combustion of the resin would be carbon dioxide and water; the concentrations of these substances in the environment will not be significantly altered by the proper incineration of the polymers in the amounts utilized for food-contact applications.

(b) Water

No significant effects on the concentrations of and exposures to any substances in fresh water, estuarine, or marine ecosystems are anticipated due to the proposed use of the subject resin. No significant quantities of any substance will be added to these water systems upon the proper incineration of the polymers, nor upon its disposal in landfills due to the extremely low levels of aqueous migration of polymer components.

(c) Land

Considering the factors discussed above, no significant effects on the concentrations of and exposures to any substances in terrestrial ecosystems are anticipated as a result of the proposed use of the subject resin. In particular, the extremely low levels of maximum migration of components of the resin, demonstrated by the extraction studies, indicate that virtually no leaching of these substances may be expected to occur under normal environmental conditions when finished food-contact materials are disposed of. Furthermore, the low production of the resin for use in food-contact applications precludes any substantial release to the environment of

³ This expectation is confirmed by the results of calculations of the potential migration to food described in the FCN. As shown there, migration calculations, based on the principles of diffusion, demonstrate very low levels (i.e.,). Thus, the quantity of leachate from the resin in solid waste deposited in landfills will be extremely small.

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their components. Thus, there is no expectation of any meaningful exposure of terrestrial organisms to these substances as a result of the proposed use of the resin.

Considering the foregoing, we respectfully submit that there is no reasonable expectation of a significant impact on the concentration of any substance in the environment due to the proposed use of the resin in the manufacture of articles intended for use in contact with food.

8. Environmental Effects of Released Substances

As discussed previously, the only substances that may be expected to be released to the environment upon the use and disposal of food-contact articles fabricated with the use of the resin consist of extremely small quantities of combustion products and extractables. No significant introductions of substances into the environment as a result of the proposed use of the FCS have been identified. Consequently, no environmental effects are expected.

9. Use of Resources and Energy

As is the case with other food-contact materials, the production, use and disposal of the resin involve the use of natural resources such as petroleum products, coal, and the like. However, the use of the subject polymer in the fabrication of food-contact materials is not expected to result in a net increase in the use of energy and resources, since the resin is intended to be used in food-contact articles which will be used in place of similar materials now on the market for use in food-contact applications. Polymers currently used in the applications in which the subject styrene-butadiene copolymers are anticipated to be used include other styrene-butadiene copolymers that are currently cleared under 21 C.F.R §177.1640 ("Polystyrene and rubber-modified polystyrene"); this regulation permits the unlimited use of styrene-butadiene copolymers that have a styrene polymer content of at least 75%.

The replacement of these types of materials by the subject copolymer (i.e., styrene-butadiene copolymers that have a styrene polymer content of 60-74%) is not expected to have any adverse impact on the use of energy and resources. Manufacture of the subject copolymer, and its conversion to finished food-contact articles, will consume energy and resources in amounts comparable to the manufacture and use of the other polymers. As is the case with the food-contact use of the currently cleared styrene-butadiene copolymers, it is unlikely that the subject resin will be used to fabricate bottles. (We have provided information relating to the technical and cost limitations of using the FCS as compared to PET and HDPE in soda and milk applications in the enclosed confidential attachment.)

As PET and HDPE bottles are the predominant food packaging articles recovered for recycling, and as styrene-butadiene copolymers will not be used in such applications, articles fabricated from the subject resin will be disposed of by means of sanitary landfill and incineration. Packaging materials produced from the resin are expected to be disposed of according to the same patterns when they are used in place of the current materials. Thus, there will be no impact on current or future recycling programs.

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10. Mitigation Measures

As shown above, no significant adverse environmental impacts are expected to result from the use and disposal of food-contact materials fabricated from the subject resin. This is primarily due to the minute levels of leaching of potential migrants from finished food-contact articles, the insignificant impact on environmental concentrations of combustion products of the resin, and the insignificant impact on the use of resources and energy when compared with the materials they are intended to replace. Thus, the use of the resin as proposed is not reasonably expected to result in any new environmental problem requiring mitigation measures of any kind.

11. Alternatives to the Proposed Action

No potential adverse environmental effects are identified herein that would necessitate alternative actions to those proposed in this Notification. The alternative of not approving the action proposed herein would simply result in the continued use of the materials that the subject resin would otherwise replace; such action would have no environmental impact. In view of the fact that the resin components are not expected to enter the environment in more than minute quantities upon the use and disposal of finished food-contact articles, and the absence of any significant environmental impact which would result from their use, the establishment of an effective Food Contact Notification to permit the use of the subject resin as described herein is environmentally safe in every respect.

12. List of Preparers

Catherine R. Nielsen, Attorney, Keller and Heckman LLP, 1001 G Street, N.W., Suite 500 West, Washington, D.C. 20001.

Lester Borodinsky, Ph.D., Staff Scientist, Keller and Heckman LLP, 1001 G Street, N.W., Suite 500 West, Washington, D.C. 20001.

13. Certification

The undersigned official certifies that the information provided herein is true, accurate, and complete to the best of her knowledge.

Date: *Mar 24, 2006*

[Redacted signature box]

Catherine R. Nielsen
Counsel for Chevron Phillips Chemical Company LP

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