

be conducted in the laboratory due to the complexity of the detection process or concerns regarding the toxicity of the reagents used to reveal the presence of the marker. Near-infra-red and ultra-violet fluorescent markers can be easily detected in the field using a small device and after brief training of the operator. There are also more exotic markers available such as those based on immunoassay, and isotopic or molecular enhancement. Such markers typically need to be detected by laboratory analysis.

Using a second dye for segregation of heating oil based on visual identification raises certain challenges. Most dye colors that provide a strong visible trace in fuels are already in use for different fuel applications. More importantly, mixing two fuels containing different strong dyes can result in interference between the two dyes rendering identification of the presence of either dye difficult. Yet, the mixing of NRLM diesel fuel into heating oil for eventual sale as heating oil would be an acceptable and often an economically desirable practice. Furthermore, to avoid interfering with the IRS tax code, it would be advantageous to maintain the current red color. Based on these considerations, the best approach to prevent the use of heating oil as NRLM diesel fuel would appear to be requiring the addition to heating oil of either a dye that does not impart a significant color to diesel fuel or a marker that imparts no color at all. The dye or marker would be added at the refinery gate, just as visible evidence of the red dye is required today. Fuel containing the marker would be segregated from highway and NRLM diesel fuel and would be prohibited from use in highway, nonroad, locomotive, or marine application.

Effective in August 2002, the European Union (EU) enacted a marker requirement for diesel fuel that is taxed at a lower rate (which applies in all of the EU member states).<sup>240</sup> The marker selected by the EU is N-ethyl-N-[2-[1-(2-methylpropoxy)ethoxy]-4-phenylazo]-benzeneamine.<sup>241</sup> This compound is also referred to as solvent yellow 124 or the Euromarker. We propose that beginning June 1, 2007, solvent yellow 124 must be added to heating oil in the

U.S. We propose that it be added in a concentration of 6 milligrams per liter, the same treatment rate as required by the EU. This would ensure adequate detection in the distribution system even if diluted by a factor of 50. A level of 0.1 milligrams per liter would therefore be used as a threshold level to identify heating oil—below this level incidental contamination would be assumed to have occurred and the prohibition on use in highway, nonroad, locomotive, or marine applications would not apply. Despite its name, solvent yellow 124 does not impart a strong color to diesel fuel when used at the proposed concentration. Therefore, we do not expect that its use in diesel fuel containing the IRS-specified red dye would interfere with the use of the red dye by IRS to identify non-taxed fuels. We request comment on this assessment.

Solvent yellow 124 is chemically similar to other additives used in gasoline and diesel fuel, and has been registered by EPA as a fuel additive under 40 CFR part 79. Its products of combustion would not be anticipated to have an adverse impact on emission control devices, such as a catalytic converter. In addition, extensive evaluation and testing of solvent yellow 124 was conducted by the EC. This included combustion testing which showed no detectable difference between the emissions from marked and unmarked fuel. We understand that Norway specifically evaluated the use of distillate fuel containing solvent yellow 124 for heating purposes and determined that the presence of the Euromarker did not cause an increase in harmful emissions from heating equipment. Based on the European experience with solvent yellow 124, we do not expect that there would be concerns regarding the compatibility of solvent yellow 124 in the U.S. fuel distribution system or for use in motor vehicle engines and other equipment such as in residential furnaces. We request comment on whether there are unique public health concern regarding the use of distillate fuel containing solvent yellow 124. The European Union intends to review the use of Solvent yellow 124 after December 2005, or earlier if any health and safety or environmental concerns about its use are raised. We intend to keep abreast of such activities and may initiate our own review of the use of solvent yellow 124 depending on the European Union's findings.

We also request comment on the extent to which jet fuel might become contaminated with solvent yellow 124 due to the presence of solvent yellow

124-containing fuels and jet fuel in the U.S. common carrier pipeline distribution system, and whether such contamination would raise concerns for the operation of jet engines. Due to safety concerns, jet fuel is held to very strict standards regarding the allowable presence of contaminants and additives. For example, the Department of Defense maintains a zero-tolerance for any contamination of jet fuel with the red dye required by the IRS (and EPA) which is chemically similar to solvent yellow 124. We are not aware that any testing has been done to date to assess whether solvent yellow 124 does raise similar concerns, and we request comment with any supporting data on this issue.

We do not believe that there any significant pathways for such contamination to take place other than by potential human error. In addition, the fact that the fuel distribution industry in the U.S. has been successful in managing contamination of jet fuel with red dye indicates that the potential contamination of jet fuel with solvent yellow 124 can also be successfully managed in the U.S. fuel distribution system. Therefore, we believe that our proposed use of solvent yellow 124 should not pose a significant risk to the maintenance of jet fuel purity. We request comment on this assessment.

Solvent yellow 124 is marketed by several manufacturers and is in current wide-scale use in the European community. We anticipate that these manufacturers would have sufficient lead-time to increase their production of solvent yellow 124 to supply the need for fuel marker that would result from this proposal. We request comment on whether there are product licensing or other concerns regarding the manufacture of solvent yellow 124 for use under this proposed rule.

We request comment on other potential markers that might be used to identify and segregate heating oil from NRLM fuel. In particular, we ask that as commenters raise potential concerns with the use of solvent yellow 124 that they also identify other possible markers that could overcome their concerns without raising others. One potential alternative we have identified is the Clir-Code® marker system manufactured by ISOTAG Technologies Inc. The Clir-Code® marker system has been used extensively in U.S. fuel and includes a field test that employs a hand-held near infra-red detector which does not require the use of any reagents. EPA deferred proposing the use of the Clir-Code® marker because we believe that the advantage of a simpler field test would not compensate for the increased

<sup>240</sup> The European Union marker legislation, 2001/574/EC, document C(2001) 1728, was published in the European Council Official Journal, L203 28.07.2001.

<sup>241</sup> Opinion on Selection of a Community-wide Mineral Oils Marking System, ("Euromarker"), European Union Scientific Committee for Toxicity, Ecotoxicity and the Environment plenary meeting, September 28, 1999.