



Mary-Ann Warmerdam
Director

Arnold Schwarzenegger
Governor

Dear Registrant:

Reformulation of Certain Liquid Formulation Agricultural and Commercial Structural-Use Pesticide Products

Pursuant to Article 8, Subchapter 1, Chapter 2, Division 6 of Title 3 of the California Code of Regulation, the Director of the Department of Pesticide Regulation (DPR) placed certain of your pesticide products into reevaluation (Attachment A).

DPR may, at anytime, evaluate a registered pesticide to carry out the provisions of Food and Agricultural Code section 12824. DPR is required to investigate all reported pesticide episodes and information received indicating that a pesticide may have caused, or is likely to cause, a significant adverse impact. If the Director finds from the investigation that a significant adverse effect has occurred or is likely to occur, the pesticide involved shall be reevaluated.

DPR initiates this reevaluation based on concerns about the release into the atmosphere of volatile organic compounds (VOCs) from agricultural and commercial structural-use pesticide products. VOCs and nitrogen oxides react with sunlight to create ozone. Ozone is a major air pollutant, which is known to be harmful to both human health and vegetation. Many pesticide active ingredients and inert ingredients are VOCs. High VOC containing liquid formulation agricultural and commercial structural-use products have been found to pose a significant adverse effect. Therefore, such pesticide products, including your product(s) listed in Attachment A, are being reevaluated. The purpose of this reevaluation is to reduce the VOC emission potential of the pesticide products included in this reevaluation to 20% or less.

Background

The federal Clean Air Act requires states to submit state implementation plans (SIP) for implementing, maintaining, and enforcing national ambient air quality standards (NAAQS) for air pollutants, such as ozone, in each air quality control region of the State. Any region that does not meet the NAAQS for a given pollutant is designated as a federal nonattainment area (NAA). Currently, several California air quality control regions do not meet the NAAQS for ozone.

In 1994, the California Air Resources Board (ARB) submitted a SIP to the U.S. Environmental Protection Agency (U.S. EPA). The SIP included a pesticide element. The pesticide element (also referred to as the Pesticide SIP) addresses VOCs that result from the use of agricultural and commercial structural-use pesticides. (Consumer pesticide product sources of VOCs are regulated by ARB.) In the pesticide element, DPR committed to reducing VOC emissions from agricultural and commercial structural-use pesticides by specified amounts within specified time periods for five NAAs, including the San Joaquin Valley. Using thermogravimetric analysis



(TGA) data (or default values where no TGA values were available), in conjunction with data from DPR's pesticide use-reporting system, DPR calculated estimated VOC emissions for each currently registered pesticide product for each air quality region in California.

DPR is principally initiating this reevaluation to meet the 1999 pesticide VOC emission goal (21 tons/day) for the San Joaquin Valley NAA. Total pesticide VOC emissions in the San Joaquin Valley NAA were 23.2 tons/day for May-Oct. 2002, and 26.5 tons/day for May-Oct. 2003, exceeding the 1999 goal by 2.0 and 5.4 tons/day (Table 1). Fumigants, and pesticide products formulated as liquids make up most of the San Joaquin Valley pesticide VOC emission inventory. Fumigant products containing metam-sodium, 1,3-dichloropropene, and methyl bromide as primary active ingredients (chloropicrin makes up a significant portion of several fumigant products, as a secondary active ingredient) comprise the largest portion of the San Joaquin Valley VOC emission inventory. However, fumigants are not amenable to reformulation. Liquid products, particularly those formulated as emulsifiable concentrates, are the next highest contributors to the pesticide VOC inventory. Pesticide products formulated as liquids comprise approximately 40 percent of the pesticide VOC emission inventory in the San Joaquin Valley nonattainment area (Table 1), with products containing chlorpyrifos and glyphosate accounting for approximately 15 percent (3.9 tons/day) of the inventory (Table 2).

Pesticide product VOC emission reductions may continue to be achieved through non-regulatory measures, such as the adoption of more integrated pest management practices. However, to meet current VOC reduction commitments, more aggressive measures are needed. Options for reducing pesticide VOC emissions can be divided into six categories:

- Formulation changes
- Application method changes
- Application rate reductions
- Temporal changes
- Spatial limits
- Integrated pest management

Staff analyses indicate that reformulation of the liquid pesticide products included in this reevaluation could result in significant VOC reductions in the San Joaquin NAA and throughout the state. Additionally, reformulation is one of the few regulatory options for which DPR can estimate VOC reductions using available data. Reformulation is likely a viable alternative only for liquid, non-fumigant pesticides. It is probably not possible or cost-effective to lower the VOC content of pesticides formulated as solids.

Included in this reevaluation are all agricultural and commercial structural-use pesticide products that are formulated as liquids and actively registered with DPR as of April 30, 2005. Exempted from the reevaluation are liquid pesticide products meeting any of the following criteria:

1. Fumigants containing the active ingredients 1,3-dichloropropene, chloropicrin, metam-sodium, methyl bromide, methyl isothiocyanate, potassium N-methyldithiocarbamate, propylene oxide, and sodium tetrathiocarbonate because it is unlikely such products can be reformulated to lower the VOC emission potential.
2. Products containing the active ingredients sodium chlorate, sodium hypochlorite, or sulfuryl fluoride because they contain no or negligible amounts of organic compounds.
3. Products with a TGA value of no more than 20%, or a water/inorganic subtraction value of no more than 20%.
4. Products that have a "registration number" (consisting of Manufacturer/Company Firm Number-Product Label Sequence Number) for which the sum of all reported applications of products with that registration number was less than 100 pounds in the 2003 statewide VOC inventory. This includes all products with the same "registration number" that are related by being either additional brand names or distributor registrations (subregistrations). The formulations of additional brand names and distributor registrations are assumed not to differ in any substantive way.
5. Products containing the active ingredients fenamiphos or molinate because they are being phased out.
6. Products intended for use as spray adjuvants.
7. Technical products (intended for use in the manufacture of other pesticide products).

The list of pesticide products included in this reevaluation differs somewhat from the list of products included in the previous VOC data call-in reevaluation (California Notice 05-03, dated February 16, 2005). The goal of the earlier reevaluation was to obtain data to better estimate VOC emissions from pesticide products. The goal of this reevaluation is to reduce VOC emissions from pesticide products.

DPR understands that the reformulation of pesticide product formulations may be complicated. Registrants will need to conduct research (e.g., solvent selection, efficacy, acute toxicity, stability, phytotoxicity); gain federal and state regulatory approval; and modify production facilities and processes.

Data Requirements

Pursuant to this reevaluation, within **90 days**, you are required to comply with one of the following three options for each of your products listed in Attachment A.

- (1) Submit a written commitment to reformulate the pesticide product to a VOC emission level of **20 percent or less**, including information on how the product will be reformulated, a detailed timeline for accomplishing each task, and a schedule for progress reports. The timeline must include proposed dates for submission of status reports, reformulation, submission to U.S. EPA, and submission to DPR. Once U.S. EPA has accepted the formulation change, the amended product must be submitted to DPR for approval, along with the results of a new TGA study.

If the formulation change is substantial, you may be required to submit new acute toxicity, efficacy, or phytotoxicity data to DPR. The reformulation process must be completed within four years of DPR's acceptance of your commitment.

- (2) Submit a request for exemption, based on the criteria listed above. Supporting documentation must be included with the request for exemption. If you are in the process of conducting TGA data in response to DPR's 2005 VOC emission data call-in, please provide sufficient documentation, including a confidential statement of formula, to show that the VOC emission potential of your product is likely to be at or below 20 percent; **or**
- (3) Submit a detailed explanation as to why the pesticide product cannot be reformulated, including why reformulation is not chemically feasible or proof that reformulation would be contrary to VOC reduction and pest management goals. If DPR determines that reformulation of your product **is** feasible, you will be required to reformulate your product. If DPR agrees that your product cannot feasibly be reformulated, you will be required to commit to alternate VOC reduction options.

Distributor Registrations

You are not required to reformulate any pesticide product, which is a distributor registration (subregistration) of another pesticide product, provided the primary product is registered in California and the primary registrant is responding appropriately to the requirements of this reevaluation. You may comply with the requirements of this reevaluation by, within **60 days**, referencing the primary product for which your product is a distributor registration.

Appeal Process

If you feel that your product(s) meet the exemption criteria listed in this notice or were incorrectly included in this reevaluation, please inform DPR in writing within **60 days**. The VOC emission potential of home use pesticides and pesticides intended for use as paints and wood preservatives are regulated by the California Air Resources Board, and therefore, exempt from this reevaluation. Please include with your submission all of the information that DPR needs to make a determination.

Mailing Address

Please address all correspondence regarding this reevaluation as follows:

VOC Mitigation Reevaluation
Attn: Ann Prichard
Department of Pesticide Regulation
1001 I Street, P.O. Box 4015
Sacramento, California 95812-4015

If you have questions regarding the reevaluation process, please contact Ms. Ann Prichard, Senior Environmental Research Scientist, Pesticide Registration branch by e-mail at <aprichard@cdpr.ca.gov> or by telephone at (916) 324-3931. For information regarding mitigation measures, please contact Mr. Randy Segawa, Senior Environmental Research Scientist, Environmental Monitoring Branch, by e-mail at <rsegawa@cdpr.ca.gov> or by telephone at (916) 324-4137.

Failure of a registrant to comply with the requirements of this reevaluation, may subject that registrant's product(s) to cancellation pursuant to Food and Agricultural Code section 12825(h).

Sincerely,

*Original Signed by David Supkoff
For Barry Cortez*

May 31, 2005

Barry Cortez, Chief
Pesticide Registration Branch
(916) 445-4377

Date

cc: Ms. Ann Prichard
Mr. Randy Segawa

Table 1. VOC emissions from pesticide products by type of product, San Joaquin Valley nonattainment area, May – Oct.

Pesticide Type	VOC Emissions (tons/day)	
	2002	2003
FUMIGANT	11.2	13.5
NON-FUMIGANT		
EMULSIFIABLE CONCENTRATE	8.5	9.1
OTHER LIQUID	1.6	1.6
SOLID	1.1	1.0
PRESSURIZED	0.8	1.0
Total	23.2	26.2

Table 2. VOC emissions from pesticide products by primary active ingredient, San Joaquin Valley nonattainment area, May – Oct. The primary active ingredient is defined as the pesticidal active ingredient present at the highest percentage in a product.

Primary Active Ingredient	Total Product VOC Emissions (tons/day)	
	2002	2003
METAM-SODIUM	6.23	5.81
1,3-DICHLOROPROPENE	3.30	4.10
METHYL BROMIDE	1.48	2.86
CHLORPYRIFOS	1.97	2.31
GLYPHOSATE, ISOPROPYLAMINE SALT	1.48	1.60
POTAS N- METHYLDITHIOCARBAMATE	0.45	1.01
ACROLEIN	0.54	0.56
DIMETHOATE	0.40	0.49
TRIFLURALIN	0.37	0.46
SULFUR*	0.51	0.45
ENDOSULFAN	0.37	0.33
GIBBERELLINS	0.37	0.34
All Other Active Ingredients	5.41	6.20

* VOC emissions from sulfur products are due to the inert ingredients in some formulations.