



ENVIRONMENTAL PROTECTION AGENCY

[EPA-HQ-OPP-2011-0374; FRL-12147-01-OCSP]

Pesticides; Emergency Order Suspending the Registrations of All Pesticide Products Containing Dimethyl Tetrachloroterephthalate (DCPA)

AGENCY: Environmental Protection Agency (EPA).

ACTION: Order.

SUMMARY: The Environmental Protection Agency (EPA or Agency) is issuing an Emergency Order directing the suspension of all registrations issued under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) for pesticide products containing the active ingredient dimethyl tetrachloroterephthalate (DCPA), also marketed under the trade name Dacthal. EPA has determined that continued sale, distribution, or use of DCPA products during the time required to cancel such products would pose an imminent hazard and that an emergency exists that does not permit EPA to hold a hearing before suspending such products. These determinations are based primarily on a risk of thyroid hormone perturbations in the fetuses of female bystanders and workers who apply DCPA or who enter treated fields after application. EPA has concerns that pregnant individuals may be currently exposed to DCPA at levels higher than those that cause fetal thyroid hormone disruption, but at which no thyroid effects would occur in the pregnant individual. The downstream effects of such hormone perturbations in the fetus may include low birth weight and irreversible and life-long impacts to children exposed in-utero, such as impaired brain development and motor skills. While the sole registrant of DCPA products, AMVAC Chemical Corporation (AMVAC), has attempted to address these concerns, EPA has determined that there is no combination of practicable mitigations under which DCPA use can continue without presenting an imminent hazard. Set forth below are the substantive bases for these determinations and the procedures that affected registrants must follow to obtain a hearing on or otherwise challenge these determinations.

DATES: This Emergency Order is issued and effective immediately upon signature. The sole affected registrant has also been notified by certified mail. Any request by the registrant for a hearing on the issue of whether an imminent hazard exists must be received by the Clerk of the EPA Office of Administrative Law Judges (OALJ). A copy of the Emergency Order has been filed with the OALJ Clerk.

ADDRESSES: The docket for this action, identified by docket identification (ID) number EPA-HQ-OPP-2011-0374, is available online at <https://www.regulations.gov>. Additional information about dockets generally, along with instructions for visiting the docket in-person, is available at <https://www.epa.gov/dockets>.

FOR FURTHER INFORMATION CONTACT: Jean Overstreet, Pesticide Re-Evaluation Division (7508P), Office of Pesticide Programs, Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460-0001; telephone number: 202-566-2425; email address: overstreet.anne@epa.gov.

SUPPLEMENTARY INFORMATION:

I. Executive Summary

A. Does this action apply to me?

This action is directed to the public in general and may be of interest to a wide range of stakeholders including environmental, human health, farm worker and agricultural advocates; the chemical industry; pesticide users; and members of the public interested in the sale, distribution, or use of pesticides. Since others also may be interested, the Agency has not attempted to describe all the specific entities that may be affected by this action.

B. What action is the Agency taking?

EPA is issuing an Emergency Order directing the suspension of all registrations for pesticide products containing the active ingredient dimethyl tetrachloroterephthalate (DCPA), also marketed under the trade name Dacthal. See Unit II.

C. What is the Agency's authority for taken this action?

The Emergency Order is issued under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), 7 U.S.C. 136 *et seq.*, pursuant to section 6(c)(3) (7 U.S.C. 136d(c)(3)). See Unit IV.

D. *What is DCPA?*

DCPA is a benzoic acid herbicide (Herbicide Resistance Action Committee/Weed Science Society of America Group 3) which inhibits cell division of root tips in target plants. It controls annual grasses and broadleaf weeds before they emerge in a variety of agricultural crops. DCPA is registered for agricultural uses, including on *Allium* species, *Brassica* species, cucurbits, root vegetables, fruiting vegetables, strawberry, sod and nursery ornamental production. Non-agricultural uses of DCPA include non-residential grass/turf including golf courses and athletic fields. While these turf uses are considered non-residential because the treated turf is not a home lawn, there is still the potential for residential post-application exposures as a result of application to these use sites. The registered end-use product may be applied by handheld, ground, aerial, and chemigation equipment.

E. *Why is EPA issuing this Emergency Order?*

EPA has determined that the further sale, distribution, and use of DCPA as an herbicide would pose an imminent hazard during the period required to conduct administrative hearings concerning cancellation. EPA has further determined that an emergency exists with respect to all DCPA products which does not permit it to hold a hearing concerning its determination of imminent hazard before acting to prohibit further sale, distribution, and use of such products.

EPA has evaluated the available information concerning the risks and benefits associated with continued use of DCPA during the time required for a cancellation hearing. Based on this information, EPA has determined that the risks of continued use during this period outweigh the benefits and that registered DCPA products therefore pose an imminent hazard. The Agency has determined that this imminent hazard constitutes an emergency, such that sale, distribution, and use of all DCPA products must be suspended during the pendency of any expedited hearing held

under FIFRA section 6(c)(2).

EPA's findings concerning the existence of an imminent hazard and an emergency are summarized in Unit V., and Unit VI. then provides in greater detail the evidence and analyses upon which these findings are based.

II. Emergency Order

This Emergency Order suspends the registration of all pesticide products which contain DCPA (see Table 1). EPA has determined that continued registration of DCPA products during the time required to conduct a cancellation proceeding would likely result in unreasonable adverse effects on the environment (which, according to FIFRA section 2(j), includes "man and other animals living therein") and therefore poses an imminent hazard. EPA has also determined that there is a substantial likelihood that the continued sale, distribution, or use of DCPA products during the pendency of a suspension hearing would result in serious harm and therefore that an emergency exists that does not permit EPA to hold a hearing before suspending such products. Accordingly, EPA is issuing this Emergency Order immediately suspending all registrations of DCPA products. The substantive rationale for these determinations is explained below.

Table 1—Pesticide Products Subject to Order

Product	EPA Reg. No.	Registrant	Active ingredient
Dacthal Flowable Herbicide	5481-487	AMVAC	Dimethyl tetrachloroterephthalate (DCPA)
Dacthal W-75 Herbicide	WI050002	AMVAC	Dimethyl tetrachloroterephthalate (DCPA)
Technical Chlorthal Dimethyl	5481-495	AMVAC	Dimethyl tetrachloroterephthalate (DCPA)

Pursuant to FIFRA section 6(c)(3), EPA hereby suspends the registration of each pesticide product containing DCPA as identified in Table 1. Effective immediately, no person in any state may distribute, sell, offer for sale, hold for sale, ship, deliver for shipment, or receive and (having so received) deliver or offer to deliver to any person any pesticide product containing DCPA. Additionally, in accordance with FIFRA section 6(a)(1), EPA has elected not

to permit the continued use of existing stocks, consistent with its policies applicable to cancellations where the Agency has identified significant risk concerns. See 56 FR 29362, 29367, June 26, 1991 (FRL-3845-4). Generally, the Agency will not permit continued distribution, sale, or use of a cancelled pesticide that raises risk concerns, absent a showing that the benefits of such use exceed the risks. The same facts supporting the imminent hazard determination in this Emergency Order weigh heavily against allowing any sale, distribution, or use of DCPA during cancellation proceedings. Accordingly, this Emergency Order expressly prohibits any person from using any pesticide product containing DCPA for any purpose. However, EPA will allow continued distribution of existing stocks of DCPA for the express purpose of returning any DCPA product to the registrant of such products. EPA intends to issue a notice of intent to cancel the same DCPA products (identified in Table 1) within the next 90 days, pursuant to FIFRA section 6(c)(3).

III. Background

Based on indications that DCPA likely has effects on thyroid function in rats, (e.g., DCPA Reregistration Eligibility Decision, 64 FR 40370, July 26, 1999 (FRL-6087-4)), EPA determined that additional information was necessary for the Agency to complete its statutorily-required Registration Review of DCPA under FIFRA section 3(g). Accordingly, in 2013 EPA issued a data call-in (DCI) under FIFRA section 3(c)(2)(B) to the sole registrant of DCPA products, AMVAC, requiring the registrant to submit a number of studies, including a comparative thyroid assay (CTA). The Agency required the CTA to evaluate the potential impact (hazard) of DCPA exposure on thyroid hormone homeostasis and thyroid function in the developing organism. AMVAC submitted a dose range-finding report for the CTA in May 2021 as a first step towards satisfying the DCI requirement. However, by itself, this report was insufficient to satisfy the DCI. In April 2022, the Agency filed a Notice of Intent to Suspend the DCPA technical (manufacturing use) product, pursuant to FIFRA section 3(c)(2)(B). See *In re FIFRA Section 3(c)(2)(B) Notice of Intent to Suspend Dimethyl Tetrachloroterephthalate*

(DCPA) Technical Registration, OALJ Docket No. FIFRA-HQ-2022-0002 (EPA 2022).

AMVAC subsequently submitted a definitive CTA in August 2022. The results of the CTA indicated that very low levels of DCPA cause thyroid hormone perturbations in fetal rats. *DCPA – Data Evaluation Record (DER) of a submitted definitive study to fulfill the Comparative Thyroid Assay (CTA) study requirement* (EPA 2023), available at <https://www.regulations.gov/document/EPA-HQ-OPP-2011-0374-0080>. The level of exposure at which fetal hormone perturbations was observed (1 mg/kg/day) is at least 10-fold lower than the dose that did not cause adverse thyroid effects in maternal animals (10 mg/kg/day) in the CTA, and lower than levels at which EPA estimates human users of DCPA are currently being exposed (maximum estimated exposure of 2.42 mg/kg/day for occupational handlers). See May 2023 ORE Assessment at <https://www.regulations.gov/document/EPA-HQ-OPP-2011-0374-0081>.

In the fetus of exposed pregnant humans, thyroid hormone perturbations, such as those observed in the CTA, can lead to downstream health problems such as low birth weight, impaired brain development, decreased Intelligence Quotient (IQ), impaired motor skills, and decreased bone deposition (Chan, S; Kilby, MD. Thyroid hormone and central nervous system development. *Journal of Endocrinology*. April 1, 2000. 165:1-8; Fisher, DA. The importance of early management in optimizing IQ in infants with congenital hypothyroidism. *The Journal of Pediatrics*. March 2000. 136:274-274; Morreale de Escobar, G; Obregón, MJ; Sescobar del Rey, F. Is neuropsychological development related to maternal hypothyroidism or to maternal hypothyroxinemia? *The Journal of Clinical Endocrinology and Metabolism*. November 1, 2000. 85:3975-3987; Zoeller, RT; Rovet, J. Timing of thyroid hormone action in the developing brain: clinical observations and experimental findings. *Journal of Neuroendocrinology*. October 20, 2004. 16:809-818). Based on the CTA data for DCPA, these effects are not expected in exposed adults, but rather in children born to individuals exposed to DCPA during pregnancy and might not always be obvious in affected children at the time of birth. The health problems associated with thyroid hormone perturbations have long-lasting consequences for children exposed before

birth that—when later identified—would not likely be recognized as resulting from prior pesticide exposure. *Id.*

In May 2023, an occupational and residential exposure (ORE) assessment was conducted based on the two DCPA end-use products registered at that time [EPA Reg. Nos. 5481-487 (a liquid formulation) and 5481-490 (a wettable powder formulation)]. See 88 FR 89447, December 27, 2023 (FRL-11590-01-OCSP) (final cancellation order for EPA Reg. No. 5481-490). Risks of concern were identified for multiple scenarios, including occupational scenarios (handler and post-application), residential post-application scenarios, and non-occupational post-application bystander spray drift scenarios. Occupational handler scenarios were of concern assuming label-prescribed personal protective equipment (PPE), and even assuming maximum PPE and/or engineering controls. Occupational post-application scenarios were of concern on the day of application (the current label required restricted entry interval of 12 hours) and even past 30 days after application. It should be noted that available data for DCPA indicates that while DCPA residues decline on treated foliage after application, residues that are present even out 40 days post-application can result in risks of concern. For bystander spray drift scenarios, risks were of concern up to and greater than 300 feet from the field edge.

These risks of concern indicate that individuals, either using DCPA products as currently registered, working in areas/fields treated with DCPA, or present near areas where DCPA is being used can be exposed to DCPA at levels greater than the level at which no adverse effects were observed in rat fetuses in the CTA. In some situations, pregnant individuals are likely being exposed to DCPA at levels greater than the level at which adverse effects were observed in the study. EPA is concerned that exposure at these levels could result in adverse effects to the fetuses of the pregnant individuals being exposed. Although the registrant has presently unilaterally promised to halt the sale and distribution of DCPA (until EPA approves new labels incorporating the registrant's proposed mitigations), DCPA products that were sold or distributed prior to this voluntary cessation remain in the hands of growers, and the Agency has no

mechanism to enforce the voluntary cessation. DCPA is used year-round on certain crops, so EPA believes that these exposures of concern are likely to be occurring at present. Succinctly, EPA believes that the continued use of DCPA products will allow for people, particularly pregnant individuals, to be unknowingly exposed to DCPA at levels that result in a risk of concern and in some cases, are equal to or greater than those that result in fetal thyroid hormone perturbations in the CTA and the life-long health effects that may result from those perturbations.

In addition to assessing the risks posed by continued registration or use of DCPA, the Agency also assessed all currently registered uses of the pesticide to conduct a “rough and ready balancing” of health risks against economic benefits. *Love v. Thomas*, 858 F.2d 1347, 1361-62 (9th Cir. 1988). DCPA’s main benefits are its broad spectrum of weed control and its safety to the crop when applied as a band of spray within rows of crops (“banded within rows”) at planting in direct-seeded production of *Brassicas* and registered *Alliums*. Weed control prior to crop emergence is important in these crops, especially in *Alliums*, as these crops are slow to emerge and vulnerable to early season weed competition.

DCPA has high benefits for growers of specialty *Brassica* crops (*e.g.*, bok choy, collards and kale), which have fewer alternative pre-emergence herbicides than major *Brassica* crops (*e.g.*, broccoli, brussels sprouts, cabbage, cauliflower). Without DCPA, growers of specialty *Brassica* crops could incur significant additional costs. DCPA has medium benefits for growers of direct-seeded major *Brassicas*, who have access to alternative herbicides and other options. DCPA provides low benefits for growers of transplanted major *Brassicas*, who have adequate alternatives available to replace DCPA. In *Alliums*, DCPA has high benefits for green onions and leeks in California due to a lack of registered preemergence herbicides for those uses. DCPA has low benefits in dry bulb onion and shallots where growers can replace DCPA with other alternatives. DCPA has low benefits in all other registered uses, and data available to EPA indicate that actual herbicide applications for these uses are limited. Though growers of *Brassica*

and *Allium* crops may be substantially impacted, these crops are internationally traded, and the global price is unlikely to increase. If the global price does not increase, growers will be unable to pass cost increases on to the consumer, thus this Emergency Order is likely to result in negligible impact at the consumer level. For more information, see *Assessment of Dimethyl Tetrachloroterephthalate (DCPA) (PC: 078701) Use, Usage, and Benefits*, available at <https://www.regulations.gov/document/EPA-HQ-OPP-2011-0374-0088>.

Between EPA's issuance of the May 2023 ORE Assessment and April 2024, the Agency and AMVAC discussed how to limit exposures to DCPA. AMVAC voluntarily cancelled all but two of its DCPA products [(EPA Reg. Nos. 5481-495 (technical product) and 5481-487 (liquid end-use product))] pursuant to FIFRA Section 6(f). 88 FR 89447, December 27, 2023 (FRL-11590-01-OCSPP) (final cancellation order). These product cancellations limited registered end-use products to only one liquid formulation (a Special Local Need (SLN) registration in Wisconsin remains active (WI050002), but will imminently be cancelled pursuant to FIFRA Section 4 due to AMVAC's failure to pay the required maintenance fees). Further, in July 2023, the registrant requested to voluntarily cancel uses on turf from its remaining product. While these voluntary cancellations would eliminate residential post-application exposures to DCPA from activities on and around turf (including golf courses and athletic fields), the currently available product labels have not been revised—due to the remaining issues not addressed by the proposed mitigations—and still allow for these uses.

AMVAC submitted additional proposals in April 2024 and May 2024 to address the identified risk to handlers, post-application workers and residential bystanders that still remained even after cancelling the products identified above and proposing cancellation of the turf uses. These additional proposals include limiting the amount of product individual handlers are allowed to use, only permitting banded applications, limiting applications over the top of crops to reduce the post-application exposure potential, and requiring buffers around agricultural applications to address risks in residential areas from spray drift. In April 2024, AMVAC

informed EPA that the company had voluntarily ceased sale and distribution of all Dacthal Flowable Herbicide (the only remaining end-use product) in the company's possession until the Agency approved product labels addressing the risks described in the May 2023 ORE Assessment. Although the registrant has presently unilaterally promised to halt the sale and distribution of DCPA, DCPA products that were sold or distributed prior to this voluntary cessation remain in the hands of growers. DCPA is used year-round on certain crops, so EPA believes that exposures of concern likely continue to occur.

While the voluntary steps identified above may reduce the risks of concern identified for DCPA, according to the Agency's analysis, these steps would not adequately address all of the identified risks of concern, leaving the current approved product label in use. As noted in the May 2023 ORE Assessment, use under the current approved product label can result in pregnant individuals being unknowingly exposed to DCPA at levels greater than the level at which adverse effects were observed in the CTA. EPA is concerned that exposure at these levels could result in adverse effects to the fetuses of the pregnant individuals being exposed. There are unknown amounts of existing DCPA product in the hands of users which may lead to the serious and significant health outcomes described in this Emergency Order. Additional explanation as to why the proposed mitigations do not address the risks of concern or alleviate the imminent hazard from continued DCPA use is provided in Unit VII., below. Due to the concerns summarized, EPA does not believe that the risks identified in this Emergency Order can be sufficiently mitigated through any means except cancellation and immediate suspension of all products containing DCPA. Accordingly, issuance of this Emergency Order is necessary.

IV. Legal Authority

A. Standards for Maintaining a Registration and Cancellation

FIFRA provides for federal regulation of pesticide distribution, sale, and use. 7 U.S.C. 136 *et seq.* Subject to limited exceptions, a pesticide may be distributed or sold in the United States only if it is registered by the EPA under FIFRA section 3(a). A registration is a license

allowing a pesticide product to be sold and distributed for specified uses in accordance with specified use instructions, precautions, and other terms and conditions. Before EPA may register a pesticide under FIFRA, an applicant must show, among other things, that using the pesticide according to its specifications “will not generally cause unreasonable adverse effects on the environment.” FIFRA section 3(c)(5)(D). “Unreasonable adverse effects on the environment” is defined, in part, as “any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of [the] pesticide.” FIFRA section 2(bb). This portion of the unreasonable adverse effects standard creates a “risk-benefit” standard wherein the EPA compares the risks presented from the use of a pesticide with the benefits from the use of the pesticide. The burden to demonstrate that a pesticide product satisfies the criteria for registration is at all times on the proponents of initial or continued registration. *Indus. Union Dept. v. Am. Petroleum Inst.*, 448 U.S. 607, 653 n. 61 (1980); *Envtl. Defense Fund v. EPA*, 510 F.2d 1292, 1297, 1302 (D.C. Cir. 1975).

Whenever the Agency determines that the product no longer satisfies the statutory criteria for registration, it may issue a notice of intent to cancel the registration of a pesticide product under FIFRA section 6(b). In such notice, the Agency may specify particular modifications in the terms and conditions of registration, such as deletion of particular uses or revisions of labeling, as an alternative to cancellation. If a hearing is requested by an adversely affected person, the final order concerning cancellation of the product is not issued until after a formal administrative hearing. FIFRA section 6(d). For purposes of this Emergency Order, and in conformity with the timetable for any cancellation hearing held pursuant to FIFRA section 6(b), EPA has assumed that a cancellation hearing concerning the registered DCPA products would require at least 18 months.

B. Suspension of a Pesticide Product

The suspension provisions in FIFRA section 6(c) give EPA the authority to take interim action until completion of the time-consuming procedures which may be required to reach a final

cancellation decision. Under this authority, EPA may suspend the registration of a product and prohibit its distribution, sale, or use during cancellation proceedings upon a finding that the pesticide poses an “imminent hazard” to humans or the environment. FIFRA section 6(c)(1). Suspension is an interim remedy which enables the Agency to abate potential unreasonable adverse effects in advance of the full analysis of risks and benefits in a cancellation hearing. The function of suspension “is to make a preliminary assessment of evidence, and probabilities, not an ultimate resolution of difficult issues.” *Envtl. Defense Fund v. EPA*, 465 F.2d 528, 537 (D.C. Cir. 1972). FIFRA section 2(1) defines “imminent hazard” as “. . . a situation which exists when the continued use of a pesticide during the time required for cancellation proceedings would be likely to result in unreasonable adverse effects on the environment or will involve unreasonable hazard to the survival of a species declared endangered by the Secretary of the Interior under Pub. L. 91-135.”

As noted previously, “unreasonable adverse effects on the environment” means that the risks associated with use of a pesticide outweigh the benefits of its use. Thus, in order to find an “imminent hazard,” the Agency must determine that the risks appear to outweigh the benefits associated with continued registration during the period likely to be necessary to complete a cancellation proceeding. Courts addressing the suspension provisions of FIFRA section 6 have held that an imminent hazard exists if there is “a substantial likelihood that serious harm will be experienced during the year or two required in any realistic projection of the administrative [cancellation] process.” *Love*, 858 F.2d at 1350 (quoting *Envtl. Defense Fund v. EPA*, 465 F.2d at 540). Thus, courts interpreting the FIFRA section 6 suspension standard have made clear that an imminent hazard finding requires a greater degree of likelihood, immediacy, and severity of harm than is otherwise required to take cancellation action under FIFRA. In evaluating the nature and extent of information before the agency, courts have instructed EPA to consider:

- (1) The seriousness of the threatened harm;
- (2) The immediacy of the threatened harm;

- (3) The probability that the threatened harm will occur;
- (4) The benefits to the public of the continued use of the pesticide; and
- (5) The nature and extent of the information before the Agency at the time it makes a decision.

Dow Chem. Co. v. Blum, 469 F.Supp. 892, 902 (E.D. Mich. 1979).

C. Emergency Suspension

If the Administrator determines that: (1) A pesticide poses an imminent hazard, and (2) An emergency exists that does not permit the Administrator to hold a hearing before suspending the pesticide, FIFRA section 6(c)(3) provides that the Administrator may issue an Emergency Order immediately suspending registration of the pesticide.

The term “emergency” is not defined by FIFRA. In the case of emergency suspension, one court has found by analogy that suspension is appropriate if there is "a substantial likelihood that serious harm will be experienced during the three or four months required in any realistic projection of the administrative suspension process." *Dow Chem. Co.*, 469 F.Supp. at 901. The Agency interprets FIFRA section 6(c)(3) to mean that, if the threat of harm to humans or the environment associated with continued sale, distribution, or use of a pesticide is sufficiently serious and immediate that the risks would be likely to outweigh the benefits during the time required for a suspension hearing, the registration of that pesticide may be suspended immediately. Thus, the determination whether an emergency exists is even more preliminary than the determination concerning the question of imminent hazard, and an Emergency Order is analogous to a temporary restraining order issued by a court while it is determining whether to issue a preliminary injunction. *Dow Chem. Co.*, 469 F.Supp. at 901.

An Emergency Order to suspend a registration may be issued without prior notice to affected registrants and is effective immediately upon issuance. In contrast to a notice of intent to suspend issued pursuant to FIFRA section 6(c)(1), there is no requirement that EPA issue a notice of intent to cancel the registration or change the classification of that pesticide prior to or

simultaneous with issuing an Emergency Order of suspension. The Agency may issue an Emergency Order of suspension, effective immediately, prior to issuing a notice of intent to cancel. However, if EPA does not issue a notice of intent to cancel within 90 days of issuing an Emergency Order of suspension, the Emergency Order of suspension will expire.

The Agency must notify the affected registrant that an Emergency Order of suspension has been issued and the registrant may request an expedited hearing by submitting a valid hearing request to the OALJ Clerk. If an expedited hearing is held concerning any product, the hearing is confined solely to the question of imminent hazard, and the Emergency Order of suspension remains in effect during the pendency of the expedited hearing. Following the expedited hearing, the Administrator issues a final order which may either retain, modify, or rescind the suspension. FIFRA section 6(c)(2).

The Administrator's determination to issue an Emergency Order of suspension is also subject to immediate review in an appropriate United States district court. The only issues in any such review are whether the Emergency Order was arbitrary, capricious, or an abuse of discretion, and was issued in accordance with procedures established by law. FIFRA section 6(c)(4).

If a registrant does not request an expedited hearing concerning a particular product but does request a hearing concerning cancellation of that product, the Emergency Order of suspension remains in effect until the completion of the cancellation proceeding, unless the suspension is lifted, stayed, or otherwise modified by the Administrator or an appropriate federal court.

V. Findings Concerning Imminent Hazard and Emergency

This unit summarizes EPA's findings concerning the existence of an imminent hazard and an emergency.

A. Findings Concerning Imminent Hazard

1. Nature and extent of information before the Administrator.

In evaluating the risks which DCPA would pose during the time needed to conduct a cancellation hearing, EPA has placed the greatest emphasis on the results of the CTA submitted to the Agency, which indicates that very low levels of DCPA (at least 10-fold lower than a dose that did not cause adverse thyroid effects in maternal animals in the CTA) causes thyroid hormone perturbations in fetal rats. *DCPA – Data Evaluation Record (DER) of a submitted definitive study to fulfill the Comparative Thyroid Assay (CTA) study requirement* (EPA 2023), available at <https://www.regulations.gov/document/EPA-HQ-OPP-2011-0374-0080>. The Agency required the CTA to evaluate the potential impact (hazard) of DCPA exposure on thyroid hormone homeostasis and thyroid function in the developing organism. Subsequent analysis of the CTA data by the Agency and review of registered end-use product labels as of May 2023, in combination with multiple other data sources, enabled the production of *DCPA Occupational and Residential Exposure Assessment for the Registration Review of DCPA* (May 18, 2023) (May 2023 ORE Assessment). This analysis indicates that current uses of DCPA may expose pregnant individuals to levels of the pesticide sufficient to cause adverse thyroid effects—with attendant lifelong health problems—in the fetuses of those individuals. There are still risk concerns even when taking into consideration the subsequent December 2023 product cancellations, the July 2023 voluntary use cancellation requests, and the registrant’s voluntary cessation of the sale and distribution of DCPA.

EPA also took time to gather and evaluate essential and available data on the benefits associated with DCPA use. While this benefits assessment focused primarily on the heaviest current use patterns and locations, EPA also assessed DCPA use on a national level for all registered uses, to the extent that information was available to the Agency. Accordingly, as discussed in Unit VI. of this Emergency Order, EPA assessed DCPA’s benefits as a preemergence treatment in crops with registered uses, primarily *Brassica* vegetables and *Alliums*, based on the observed usage of DCPA in these crops, weed control recommendations, and other information on DCPA’s benefits from extension publications, pest management strategic plans,

United States Department of Agriculture Office of Pest Management Policy (USDA OPMP), and a report from faculty at the University of California (UC) Davis on DCPA's benefits in California agriculture.

2. Seriousness of the threatened harm.

In the CTA, decreased levels of the thyroid hormones T3 (triiodothyronine) and T4 (thyroxine) were observed in rats exposed to very low levels of DCPA (1 mg/kg/day). The level of exposure at which fetal hormone perturbations were observed is much lower than the level at which effects were observed in adult rats, and lower than levels at which EPA estimates human users of DCPA are currently being exposed. *See* May 2023 ORE Assessment at <https://www.regulations.gov/document/EPA-HQ-OPP-2011-0374-0081>.

In the fetus of exposed pregnant humans, thyroid hormone perturbations, such as those observed in the CTA, can lead to downstream health problems such as low birth weight, impaired brain development, decreased IQ, impaired motor skills, and decreased bone deposition (Chan and Kilby, 2000; Fisher, 2000; Morreale, et al., 2000; Zoeller and Rovet, 2004). Based on the CTA data for DCPA, these effects are not expected in exposed adults, but rather in children born to individuals exposed to DCPA during pregnancy and might not always be obvious in affected children at the time of birth. Brief thyroid hormone perturbations in fetuses during critical stages of development may result in life-long consequences for children exposed before birth (*e.g.*, impaired brain development, decreased IQ, and impaired motor skills) that—when later identified—would not likely be recognized as resulting from prior pesticide exposure. *Id.*

3. Immediacy of the threatened harm.

EPA has determined that there are likely immediate, ongoing risks of concern presented by continued use of DCPA. Of primary concern, based on usage data, are the risks identified in the May 2023 ORE Assessment for occupational scenarios (handler and post-application) and non-occupational post-application bystander spray drift scenarios. Occupational handler scenarios were of concern assuming label-prescribed PPE, and even assuming maximum PPE

and/or engineering controls. Occupational post-application scenarios were of concern on the day of application (the current label required restricted entry interval of 12 hours) and even past 30 days after application. It should be noted that available data for DCPA indicates that while DCPA residues decline on treated foliage after application, residues that are present more than 40 days post-application for some uses can result in risks of concern. For bystander spray drift scenarios, risks were of concern up to and greater than 300 feet from the field edge.

These risks of concern indicate that individuals, either using DCPA products as currently registered, working in areas/fields treated with DCPA, or present near areas where DCPA is being used, can be unknowingly exposed to DCPA at levels greater than the level at which no adverse effects were observed in rat fetuses in the CTA, and in some situations, can be exposed to DCPA at levels greater than the level at which adverse effects were observed in the study. EPA is concerned that exposure at these levels could result in adverse effects to the fetuses of pregnant individuals being exposed. Although the registrant has presently unilaterally promised to halt the sale and distribution of DCPA (until EPA approves new labels incorporating the registrant's proposed mitigations), DCPA products that were sold or distributed prior to this voluntary cessation remain in the hands of growers and EPA has no mechanism to enforce this voluntary cessation. DCPA is used year-round on certain crops; EPA thus believes that these exposures of concern are likely occurring at present. To summarize, EPA believes that the continued use of DCPA products will allow for people, particularly pregnant individuals, to be unknowingly exposed to DCPA at levels that result in a risk of concern and in some cases, are equal to or greater than those that result in fetal thyroid hormone perturbations in the CTA and the life-long health effects that may result from those perturbations.

4. Probability that the threatened harm will occur.

Based on EPA's analysis of the available evidence, the fetuses of pregnant individuals exposed to DCPA are at significant risk for adverse thyroid hormone changes. Without this Emergency Order, such exposures would continue during the time required to conduct a

cancellation hearing. If the products were not suspended, use of DCPA could lawfully continue during the pendency of a cancellation hearing.

Although EPA considered AMVAC's statement that the company has voluntarily temporarily ceased sale and distribution of Dacthal Flowable Herbicide in the context of this determination, EPA still considers the probability of the harm in this situation sufficiently likely to justify this Emergency Order. While such voluntary steps would likely reduce the risks of concern identified for DCPA, the Agency has no means of assessing whether AMVAC is adhering to this temporary cessation of sale, neither EPA nor AMVAC has information concerning subsequent downstream distribution and use, and—in any event—there is no mechanism under FIFRA through which EPA can enforce compliance with such voluntary measures. AMVAC could resume sale and distribution at any time, and application of DCPA products by end users is still allowed under current approved product labels.

EPA also considered, in the context of this determination, AMVAC's voluntary cancellation of all but two of its DCPA products (EPA Reg. Nos. 5481-495 and 5481-487; a SLN registration in Wisconsin remains active (WI050002), but will imminently be cancelled pursuant to FIFRA section 4 due to AMVAC's failure to pay the required maintenance fees) pursuant to FIFRA section 6(f). 88 FR 89447, December 27, 2023 (FRL-11590-01-OCSPP) (final cancellation order). Additionally, AMVAC submitted several revised proposed product labels from approximately July 2023 through May 2024, including its requests to cancel certain uses of DCPA. Of particular note, in July 2023 the registrant requested to voluntarily cancel remaining (non-residential) uses on turf from its remaining products. Accordingly, while risks of concern arising from turf uses are addressed in the May 2023 ORE Assessment, those risks are not part of the basis for this Emergency Order. However, the proposed product labels do not adequately address the risks of concern for continued DCPA use. Following the registrant's April and May proposals, EPA has determined that there is no combination of practicable mitigations under which DCPA use can continue without presenting an imminent hazard. Additional explanation as

to why the proposed mitigations do not address the risks of concern or alleviate the imminent hazard from continued DCPA use is provided in Unit VII. of this Emergency Order. Due to the concerns described in this unit, EPA does not believe that the risks identified in this Emergency Order can be mitigated through any means except cancellation and immediate suspension of all products containing DCPA. Accordingly, issuance of this Emergency Order is necessary.

5. Benefits to the public of the continued use of DCPA.

While DCPA has high benefits for the growers of certain crops, EPA estimates that the suspension and cancellation of DCPA is likely to have negligible impacts to consumers of those crops. DCPA is registered for use in the production of *Brassica* (cole) vegetables (*e.g.*, broccoli, cabbage, cauliflower, brussels sprouts), certain *Alliums* (onions, including dry bulb and various green onions), certain cucurbit, root, and fruiting vegetables, strawberries, sod, and nursery ornamental plants. While DCPA is registered for non-agricultural turf uses, the registrant has requested cancellation of these uses; thus, these non-agricultural turf uses are not addressed here. DCPA is applied preemergent to the crop, and growers use DCPA for residual control of major broadleaf and grassy weeds, including common chickweed, common purslane, dodder, annual bluegrass, canarygrass, and barnyardgrass. DCPA's main benefits are its broad spectrum of weed control and its safety to the crop at planting in direct-seeded production of *Brassicas* and registered *Alliums*. Weed control prior to crop emergence is important in these crops, especially in *Alliums*, as these crops are slow to emerge and vulnerable to early-season weed competition.

DCPA has high benefits for growers of specialty *Brassica* crops (*e.g.*, bok choy, collards, and kale), which have fewer alternative pre-emergence herbicides than major *Brassica* crops (*e.g.*, broccoli, brussels sprouts, cabbage, cauliflower). In the absence of DCPA, growers of specialty *Brassica* crops would need to use a combination of alternative herbicides and hand-weeding labor to achieve the same level of control, at an additional cost to growers. Growers of specialty *Brassica* crops could lose up to 20% of gross revenue in the absence of DCPA due to lower yield resulting from less dense planting to avoid damage from hand-weeding, competition

from uncontrolled weeds, or crop damage and increased labor costs resulting from increased hand-weeding.

DCPA has medium benefits for growers of direct-seeded major *Brassicac*s who can acquire hand-weeding labor. In the absence of DCPA, growers of direct-seeded broccoli, brussels sprouts, cabbage, and cauliflower could replace DCPA with alternative preemergence herbicides and increased hand-weeding, facing estimated cost increases of \$40 per acre or 1% of gross revenue. If growers are unable to acquire the labor for increased hand-weeding, they would either have to switch to transplanting (as opposed to direct-seeding) and using oxyfluorfen, which is registered on *Brassicac*s for transplanted broccoli, cabbage, and cauliflower only (growers of brussels sprouts can use napropamide), or else face yield loss. Both switching to transplanting with oxyfluorfen or using bensulide without additional hand-weeding may result in losses of over \$700 per acre or 9% of gross revenue.

In *Alliums*, DCPA has high benefits for green onions and leeks in California due to a lack of registered preemergence herbicides for those uses. DCPA has low benefits in dry bulb onion and shallots where growers can replace DCPA with pendimethalin or a combination of bensulide and additional hand-weeding for sufficient control of early season weeds.

DCPA has low benefits in strawberry and the remaining cucurbit, fruiting, and root vegetables for which it is registered for use because extension publications do not recommend DCPA and/or recommend alternative preemergence herbicides; where surveyed, growers do not report using DCPA extensively on these crops. DCPA also has low benefits in sod and ornamental production as registered and recommended alternative herbicides are available on these use sites and growers do not report using DCPA.

In the use sites where there are high benefits from the use of DCPA, its absence could result in growers who rely on DCPA shifting to production of other crops. For registered *Brassicac* and *Allium* crops, use of alternatives will likely result in increased treatment costs for growers, but these costs will have a negligible impact at the consumer level. The shift away from

production of *Brassicac*s could decrease U.S. production of *Brassica* crops; however, *Brassicac*s are internationally traded crops, the total supply globally is unlikely to substantially decrease, and the global price for these commodities is unlikely to substantially increase. If the global price for these commodities does not increase, growers will be unable to pass cost increases from the absence of DCPA on to consumers. Thus, this Emergency Order is likely to result in negligible impact at the consumer level, but some growers of *Brassica* and *Allium* crops may be substantially impacted.

For additional details on the benefits of DCPA in registered use sites, see *Assessment of Dimethyl Tetrachloroterephthalate (DCPA) (PC: 078701) Use, Usage, and Benefits*, available at <https://www.regulations.gov/document/EPA-HQ-OPP-2011-0374-0088>.

B. Findings Concerning Existence of an Emergency

The Agency has determined that an emergency exists such that sale, distribution, and use of all DCPA products must be suspended during the pendency of any expedited hearing. In order to find that an emergency exists, EPA must determine whether the threat of harm associated with continued sale, distribution, or use of DCPA products is sufficiently serious and immediate that the risks outweigh the benefits during the time required for a suspension hearing. For purposes of this determination, and in conformity with the mandatory timetable for any hearing on the question of imminent hazard established by FIFRA section 6(c)(2) and 40 CFR part 164, subpart D, EPA assumes that a suspension hearing would require approximately four months. *Dow Chem. Co.*, 469 F.Supp. at 901.

Although EPA considered AMVAC's statement that the company has voluntarily ceased sale and distribution of Dacthal Flowable Herbicide in the context of this determination, EPA still considers the probability of the harm in this situation sufficiently likely to justify this Emergency Order. While such voluntary steps would likely reduce the risks of concern identified for DCPA, the Agency has no means of assessing whether AMVAC is adhering to this temporary cessation of sale, neither EPA nor AMVAC has information concerning subsequent

downstream distribution and use, and—in any event—there is no mechanism under FIFRA through which EPA can enforce compliance with such voluntary measures. AMVAC could resume sale and distribution at any time, and application of DCPA products by end users is still allowed under current approved product labels.

In the absence of an emergency order, it appears that exposures to pregnant individuals resulting in adverse fetal thyroid effects could unknowingly occur as a result of lawful use during the time required for a suspension hearing. DCPA is registered and is typically used for weed control throughout the calendar year on a variety of crops, including *Allium* species, *Brassica* species, cucurbits, root vegetables, fruiting vegetables, and strawberry.

An immediate prohibition on use of DCPA products may cause some disruption, as users need to identify and obtain or implement alternatives. However, the Agency has concluded that alternative pesticides are available for most DCPA target pests and use sites, though there will be impacts on growers as they transition to combinations of alternative herbicides and hand weeding at an additional cost, and some *Brassica* and *Allium* growers that currently use DCPA may choose to cease production of these crops. Growers who have DCPA at the time the order is issued will not only have to obtain other weed control products, but they will also bear the burden of disposing of DCPA products. Based on the available evidence on risks and benefits, EPA has determined that an emergency exists that does not permit the Agency to hold a hearing before suspending the registration of DCPA products. EPA has concluded that the risks of continued use are sufficiently serious and immediate to require immediate prohibition of all use of all pesticide products containing DCPA. EPA has also concluded that continued distribution or sale of DCPA products would be inconsistent with and frustrate enforcement of any prohibition on continued use of such products.

C. Waiver of Consultation with the Secretary of Agriculture and Submission to the FIFRA Scientific Advisory Panel

Although FIFRA section 6(b) generally requires prior review of and comment upon

proposed notices of intent to cancel by the Secretary of Agriculture and the FIFRA Scientific Advisory Panel (SAP), FIFRA specifically provides the Administrator with the authority to waive such requirements and proceed in accordance with FIFRA section 6(c) whenever it finds that suspension of a pesticide registration is necessary to prevent an imminent hazard to human health. As described in this unit, EPA has found that immediate suspension of the registrations of pesticide products containing DCPA is necessary to prevent an imminent hazard to human health, and the Administrator hereby invokes the authority to waive the requirements for the Secretary of Agriculture and FIFRA SAP reviews.

VI. Analysis of Risk Posed by Continued Use of DCPA

As noted previously, in May 2023, an ORE assessment was conducted based on the two DCPA products registered at the time: EPA Reg. Nos. 5481-487 (a liquid formulation) and 5481-490 (a wettable powder formulation). The wettable powder product has since been voluntarily cancelled by AMVAC. Full details of inputs, assumptions and calculations are provided in the ORE Assessment. A summary of the exposure and risks identified in the May 2023 ORE Assessment are presented below. This summary takes into account the product cancellations that occurred in December 2023 (*i.e.*, the summary is only representative of the remaining liquid end-use product). While this product does allow for use on non-residential turf (including golf course and athletic fields), for which risks of concern were identified, a summary is not included here since those uses were requested for voluntary cancellation. The primary concern addressed by this Emergency Order is occupational risks and non-occupational bystander drift risks.

A. Hazard Characterization

Any risk assessment begins with an evaluation of a chemical's properties that have the potential to cause adverse effects to humans. In evaluating toxicity or hazard, EPA reviews toxicity data, typically from studies with laboratory animals, to identify any adverse effects on the test subjects leading to the establishment of a Lowest Observed Adverse Effect Level (LOAEL) and a No Observed Adverse Effect Level (NOAEL). A Point of Departure (POD) is

the dose that serves as the 'starting point' in extrapolating a risk to the human population. PODs are selected to be protective of the most sensitive adverse toxic effect for each exposure scenario and are chosen from toxicity studies that show clearly defined NOAELs or LOAELs, dose-response relationships, and relationships between the chemical exposure and effect. EPA will select separate PODs, as needed, for each expected exposure duration and route of exposure.

DCPA has low acute toxicity via the oral, dermal, and inhalation routes (Toxicity Category III-IV). DCPA is not a dermal sensitizer and is classified as Toxicity Categories III and IV for eye and skin irritation, respectively. Thyroid effects are the most sensitive endpoints in the DCPA toxicity database. Thyroid histological alterations and thyroid hormone perturbations were seen at all exposure durations and across lifestages. The decreased fetal thyroid hormone levels identified in the CTA are the basis for occupational and adult bystander assessments. Toxicological PODs for adults (including pregnant individuals) were selected for the following routes of exposure:

- Short- and intermediate-term dermal; and
- Short- and intermediate-term inhalation.

Although no adverse effects were observed up to the highest doses tested in the route-specific dermal and inhalation studies (1000 mg/kg/day and 3.11 mg/L, respectively), increased quantitative susceptibility in the fetal life stage was observed in the definitive CTA in rats. Thus, an oral POD was selected for dermal and inhalation risk assessment because the dermal and inhalation toxicity studies did not evaluate the critical endpoint (thyroid hormone levels, thyroid weights or thyroid histopathology) or the fetal lifestage that were identified as the most sensitive endpoint and lifestage, respectively, in the DCPA database for these exposure scenarios. The NOAEL of 0.1 mg/kg/day from the CTA served as the POD for evaluating short-and intermediate-term adult dermal and inhalation exposure scenarios. Although the POD for adults is based on the disruption of the thyroid hormones in rats, the 10X interspecies extrapolation factor is retained because the young (fetus) has been identified as the target lifestage of concern

and differences in the toxicodynamics for the developing thyroid function between juvenile rats and juvenile humans are not well understood. The level of concern (LOC) for adult dermal and inhalation exposure scenarios is 100 (10X interspecies extrapolation, 10X intraspecies variation, and 1X FQPA when applicable). For dermal exposure scenarios, a dermal absorption factor (DAF) of 15%, based on the results of an in vivo dermal absorption study (MRID 42651502), was applied to account for the amount of chemical absorbed through the skin. For the inhalation exposure scenario, toxicity via the inhalation route is assumed to be equivalent to oral exposure.

Since decreased fetal thyroid hormone levels (a female specific effect) is the endpoint for both the dermal and inhalation exposure scenarios, a body weight of 69 kg (representing females) was used in the dose calculations rather than 80 kg (representing males and females). This body weight was used for the ORE assessment because it accounts for the adverse effects to the fetal lifestage and is protective of pregnant individuals.

Although a cancer assessment was also presented for DCPA in the May 2023 ORE Assessment, the concern for the Emergency Order are the non-cancer risks, specifically for the fetuses of exposed pregnant individuals. As such, only information related to the non-cancer risks for adults are further summarized here.

B. Occupational Exposure and Risk Estimates

1. Occupational post-application exposure/risk estimates.

EPA uses the term post-application to describe exposures that occur when individuals are present in an environment that has been previously treated with a pesticide (also referred to as re-entry exposure). Such exposures may occur when workers enter previously treated areas to perform job functions, including activities related to crop production, such as scouting for pests or harvesting. Post-application exposure levels vary over time and depend on such things as the type of activity, the nature of the crop or target that was treated, the type of pesticide application, and the chemical's degradation properties. In addition, the timing of pesticide applications, relative to harvest activities for example, can greatly reduce the potential for post-application

exposure.

A series of assumptions and exposure factors served as the basis for completing the occupational post-application risk assessments. Each assumption and factor are detailed in the May 2023 ORE Assessment. The algorithms used to estimate non-cancer exposure and dose for occupational post-application scenarios can be found in Appendix A of the May 2023 ORE Assessment. Occupational post-application non-cancer dermal risk estimates are of concern on the day of application (*i.e.*, 0-DAT “days after treatment”) (*i.e.*, MOEs < LOC of 100) for all scenarios with MOEs ranging from 0.08 to 5.6. Some scenarios are no longer of concern from 20 to 31-DAT; however, most scenarios are still of concern greater than 30-DAT. The lowest MOEs are associated with activities that are likely to occur later in the season, when residues may be low but still present. These activities include scouting, hand harvesting, and moving hand-set irrigation in crops such as broccoli, brussels sprouts, cabbage, cauliflower, and onion. For these activities, there are still risks of concern at greater than 30-DAT. A full list of crops/activities and their associated risks are presented in the May 2023 ORE assessment.

A restricted entry interval (REI) can be established based on different sources of information considering both acute effects and also systemic effects. EPA considers both the acute toxicity categories for the active ingredient in a product and also the post-application risk assessment which may incorporate systemic effects from exposure to a pesticide product and establishes the REI based on the more protective duration.

Although active ingredients like DCPA that are classified as Category III or IV for acute dermal, eye irritation and primary skin irritation are assigned under 40 CFR 156.208(c)(2) a 12-hour REI (currently listed on registered product labels), short- and intermediate-term post-application risk estimates were of concern on 0-DAT (12 hours following application) for all activities with implications for re-entry risks of concern extending past 30 days.

2. Occupational handler exposure/risk estimates.

EPA uses the term handlers to describe those individuals who are involved in the

pesticide application process. EPA believes that there are distinct job functions or tasks related to applications and exposures can vary depending on the specifics of each task. The amount of chemical used in each application (*i.e.*, application rate and area treated or amount handled for the specific task), the kinds of equipment used, the target being treated, and the level of protection used by a handler can cause exposure levels to differ in a manner specific to each application event.

Based on the anticipated use patterns and current labeling, types of equipment and techniques that can potentially be used, occupational handler exposure is expected from the registered uses. A series of assumptions and exposure factors served as the basis for completing the occupational handler risk assessments. Each assumption and factor are detailed in the May 2023 ORE Assessment. The algorithms used to estimate non-cancer exposure and dose for occupational handlers can be found in Appendix A of the May 2023 ORE Assessment.

Estimates of dermal and inhalation exposure were calculated for various levels of personal protective equipment (PPE). Results are presented for the highest level of protection available for the particular scenario, which ranged from double layer of clothing (*i.e.*, coveralls over a long-sleeved shirt and long pants) and a PF10 respirator to engineering controls (*i.e.*, closed loading systems or closed cab tractors or cockpits). The current DCPA product labels direct mixers, loaders, applicators and other handlers to wear baseline attire (*i.e.*, long sleeve shirt, long pants, shoes and socks) as well as PPE including chemical- or water-resistant gloves.

Dermal and inhalation risk estimates were combined in this assessment, since the toxicological effects for these exposure routes were similar. Occupational handler non-cancer combined (dermal and inhalation) risk estimates are of concern (*i.e.*, MOEs < LOC of 100) when considering currently labelled PPE. Further, there are still risk estimates of concern for 37 out of 39 scenarios with engineering controls (*e.g.*, closed loading systems for mixer/loaders, closed cockpit or cab for aerial or groundboom applications) and/or maximum PPE (*i.e.*, double layer, gloves, respirators, etc.). Combined (dermal and inhalation) MOEs range from 0.065 to 150. See

Table 8.1.1 of the May 2023 ORE Assessment for the full list of occupational handler non-cancer exposure and risk estimates for DCPA.

C. Non-Occupational Spray Drift Exposure and Risk Estimates

The spray drift risk estimates are based on an estimated deposited residue concentration as a result of screening level agricultural application scenarios. DCPA is used on field crops, sod farms, and nurseries, and can be applied via groundboom and aerial equipment. The recommended drift scenario screening level options are as follows:

- Groundboom applications are based on the AgDrift model option for high boom height and using very fine to fine spray type using the 90th percentile results.
- Aerial applications are based on the use of AgDrift Tier 1 aerial model option for a fine to medium spray type and a series of other parameters which will be described in more detail below (*e.g.*, wind vector assumed to be 10 mph in a downwind direction for entire application/drift event). (AgDrift allows for consideration of even finer spray patterns characterized as very fine to fine. However, this spray pattern was not selected as the common screening basis since it is used less commonly for most agriculture.)

Adult dermal exposures resulting from spray drift residues were estimated. Exposures were considered for 50 feet wide lawns where the nearest side of the property was directly adjoining the treated field (at field edge) and at varied distances up to 300 feet downwind of a treated field. The algorithms used to estimate exposure and dose for non-occupational spray drift can be found in Appendix C of the May 2023 ORE Assessment.

Results for the screening level scenarios are presented in Table 6.1.1 (adult risk estimates) of the May 2023 ORE Assessment and indicate that there are risks of concern at the field edge and at distances greater than 300 feet for some adult exposure scenarios (which includes exposures to pregnant individuals). For adults, dermal screening-level risk estimates were of concern at the field edge with MOEs ranging from 0.4-1 for all scenarios (dermal LOC = 100). The distance required for exposures to reach the LOC of 100 is >300 feet from the field

edge.

VII. Analysis of Benefits Associated with Continued Use of DCPA

The Agency assessed DCPA's benefits as a preemergence treatment in the *Brassica* vegetables and *Alliums* for which there are registered uses based on the observed usage of DCPA in these crops, weed control recommendations, and other information on DCPA's benefits from extension publications, pest management strategic plans, United States Department of Agriculture Office of Pest Management Policy (USDA OPMP), and a report from faculty at the University of California (UC), Davis, on DCPA's benefits in California agriculture.

EPA determined that DCPA is rarely used in registered use sites other than *Brassica* vegetables and *Alliums* because it provides little to no benefits to growers of those other registered use sites, it is not recommended for weed control in those sites, and/or other registered preemergence herbicides are preferred.

For more information on the benefits of DCPA usage (and to see supporting references), see *Assessment of Dimethyl Tetrachloroterephthalate (DCPA) (PC: 078701) Use, Usage, and Benefits*, available at <https://www.regulations.gov/document/EPA-HQ-OPP-2011-0374-0088>.

A. Benefits in Brassicas

Growers use DCPA, as directed by the product label, when planting seed (also referred to as direct seeding) and at transplant to provide residual control of weeds during the period between *Brassica* seeding and crop emergence, or during the establishment period for transplants. DCPA is applied banded within rows to reduce weed emergence around vulnerable seedlings. DCPA controls a broad range of annual broadleaf and grassy weeds prior to emergence, including several weeds identified by the University of California Integrated Pest Management (IPM) Program as problem weeds in *Brassica* production: *i.e.*, weeds that compete with growing crops and reduce yield, pose a risk to workers, are prolific seed producers (leading to weed problems in subsequent crops), and/or for which no other herbicides are registered. Of these identified problem weeds, DCPA controls common chickweed and common purslane and

provides partial control of little mallow, London rocket, burning nettle, nightshades, and sowthistles. Since *Brassica* vegetables can be produced year-round in California and DCPA is applied at planting/transplanting, applications of DCPA can and do occur in all months of the year. As noted previously, DCPA use is more prevalent for direct-seeded production than when growers use transplants. Direct-seeded *Brassicas* are more dependent on weed control than transplants because weeds can more readily out-compete emerging seedlings than transplants.

The cost of herbicides used in *Brassicas* ranges widely, even herbicides targeting the same pests. DCPA (\$113/acre) is more expensive than other herbicides used in *Brassicas* (\$4/acre - \$90/acre) (Kynetec USA, Inc. 2022. “The AgroTrak® Study from Kynetec USA, Inc.” iMap Software. Database Subset: 2017-2021. [Accessed February 2023]). Growers’ willingness to pay a premium for DCPA suggests that DCPA cannot be easily replaced with other available herbicides in some applications.

In production of direct-seeded broccoli, Brussels sprouts, cabbage, and cauliflower, the most likely pre-emergent alternative to DCPA is bensulide. Bensulide can be applied without injuring the crop (crop-safe), and it allows for a number of rotational crops to be grown following *Brassicas*, but it does not control the full spectrum of weeds that DCPA controls. The next most likely alternative for these use sites is trifluralin: it is cheaper and has slightly better efficacy than bensulide, but it can be less crop-safe than bensulide, and it has a long (12-month) plant-back interval (PBI) for spinach, a common rotational crop. Trifluralin is not an alternative to DCPA in arid areas or during cold, wet winters due to the likelihood of crop injury. Neither bensulide nor trifluralin control the problem weeds little mallow, London rocket, or sowthistles; DCPA partially controls these weeds. If growers switch to bensulide or trifluralin to replace DCPA, the addition of hand-weeding may be necessary to replace early-season in-row weed control, as mechanical weeding and postemergence herbicides can damage emerging seedlings. Growers of direct-seeded broccoli, Brussels sprouts, cabbage, and cauliflower could also switch to transplanting in order to avoid the critical period for weed control between planting and

emergence in direct-seeded production; this may also reduce hand-weeding labor needs from the loss of DCPA, though other labor costs may increase. Growers of direct-seeded broccoli, Brussels sprouts, cabbage, and cauliflower who do not have access to transplanting equipment and are unable to hire sufficient additional labor for increased hand-weeding may face substantial cost increases to either purchase or rent transplanting equipment or hire contract transplanters, or else suffer yield loss due to uncontrolled weeds.

In the absence of DCPA, growers who transplant broccoli, cabbage, and cauliflower could switch to oxyfluorfen with few to no impacts on weed control, crop safety, or crop rotational programs. Oxyfluorfen, however, does not control common chickweed. Additional hand-weeding or a bensulide application may be necessary to replace in-row control of common chickweed. Oxyfluorfen is not registered for use on Brussels sprouts, but these growers can use napropamide, which is also less expensive and is effective against all problem weeds that DCPA is effective against. While napropamide has crop safety concerns and may not be an appropriate alternative for direct-seeded Brussels sprouts, growers who transplant Brussels sprouts can use napropamide without significant crop injury concerns. Napropamide also has long PBIs for several rotational crops; however, leafy greens, the typical rotational vegetables for Brassicas, can be planted following an early season napropamide application with little to no estimated impact to growers.

Growers of both direct-seeded and transplanted specialty *Brassica* may also replace DCPA with alternative pre-emergence herbicides such as bensulide and increased hand-weeding but could lose up to 20% of gross revenue in the absence of DCPA due to lower yield resulting from less dense planting to avoid damage from hand-weeding, competition from uncontrolled weeds, or crop damage and increased labor costs resulting from increased hand-weeding.

B. Benefits in Alliums

DCPA is recommended for weed management throughout the season; however, DCPA is the only herbicide that UC IPM recommends for application at seeding or transplant in onion,

indicating its specific importance in early-season weed control in onion in California. Herbicide extension recommendations for states other than California generally do not recommend DCPA therefore the analysis for *Alliums* focuses on California. In onion, DCPA is used at seeding to provide residual control of weeds during the period between onion planting and emergence; DCPA can also be used at transplant. Preemergence weed control in onion is especially important because of the long time between onion seeding and emergence which permits weeds to outcompete the crop. DCPA is typically applied banded within rows to reduce weed emergence around vulnerable seedlings, and registered postemergence herbicides can only be applied after the crop and weeds have emerged. In the absence of DCPA, onion growers would need to use other preemergence herbicides combined with other weed control or avoidance strategies, such as hand/mechanical weeding and growing onions from transplants, where feasible.

Herbicides that can be applied before crop emergence in onions and associated crops (shallot, leek) are bensulide, ethofumesate, flumioxazin, and pendimethalin; however, these herbicides are registered for different *Allium* crops than DCPA. Bensulide, ethofumesate, and flumioxazin are registered only for dry bulb onions including shallots; however, flumioxazin cannot be used in California. Pendimethalin is registered for all *Alliums*, but it is not registered at the state level for use in green onion or leek in California.

DCPA provides control or partial control for a wide spectrum of annual weeds in *Allium* spp. Of these weeds, several are problem weeds in California onion production: annual bluegrass, canarygrass, and dodder. While bensulide, ethofumesate, and pendimethalin are recommended for control of annual bluegrass and canarygrass in dry bulb onion and shallots, pendimethalin is the only preemergence herbicide besides DCPA that UC IPM recommends for control of dodder. Pendimethalin also has the broadest weed control spectrum of the potential alternatives, as it controls or partially controls all the weeds DCPA controls, while ethofumesate and bensulide have narrower control spectra. Additionally, onions are sensitive to crop injury

from ethofumesate. If unable to use DCPA, affected dry bulb onion growers could use pendimethalin and likely face no reductions in weed control. However, pendimethalin cannot be used on green onions or leeks in California. Pendimethalin is already the recommended preemergence herbicide for green onions grown outside of California as it is cheaper, has better efficacy than DCPA, and performs better in the muck and mineral soils where most onions outside California are grown.

In the absence of DCPA, growers could transplant green onions to avoid the critical weed management period between onion seeding and emergence; however, transplanting is not currently a common practice in California onion production and may not be feasible for growers currently using DCPA. Green onions are densely planted, so transplanting can be infeasible for large-scale operations, and dense plantings can also make hand-weeding and mechanical cultivation difficult or impractical. If no preemergence herbicide options exist and transplanting is typically infeasible for most onion growers who use DCPA, then growers would need to rely on other cultural weed management practices. Cultural weed management practices include using fields with low levels of weed pressure or using pre-irrigation before planting followed by shallow cultivation to reduce the emergence of weeds during crop emergence. Growers can also rotate onions with crops that have more effective registered herbicide options to reduce weed pressure before onions are planted. In all cases, the labor needs for green onion production would likely increase due to the lack of a preemergence herbicide.

In the absence of DCPA, dry bulb onion growers can use pendimethalin for early season weed control. Since pendimethalin provides the same level of preemergence weed control as DCPA, dry bulb onion growers will not face revenue loss from switching from DCPA to pendimethalin for early season weed control. Like dry bulb onion growers, shallot growers can also replace DCPA with pendimethalin for similar weed control without revenue loss. EPA expects that green onion and leek growers in California will face substantial impacts from the loss of DCPA due to a lack of registered preemergence herbicides; impacts include yield losses

and increased labor for hand-weeding or other cultural weed management practices.

VIII. Risk Mitigation Measures

EPA has explored various mitigation measures to feasibly address the identified risks of concern to bystanders, occupational handlers, and occupational post-application workers. EPA requested public comment on the ORE Assessment on June 1, 2023, and received comments from various stakeholders including AMVAC. EPA has received various mitigation proposals from AMVAC beginning in July 2023, with each proposal further restricting DCPA registered uses, and a proposed draft product label submitted in April 2024. After EPA's extensive review and analysis of AMVAC's April 2024 mitigation proposal and considering all feasible mitigation measures, risks of concern remain for handlers and post-application workers exposed to DCPA and are documented in a revised ORE Assessment (*DCPA. Revised Occupational and Residential Exposure Assessment for the Registration Review of DCPA to Reflect Proposed Mitigation*, May 2, 2024) (Revised ORE Assessment). On May 7, 2024, AMVAC submitted another proposed draft product label incorporating additional restrictions to address the remaining handler and post-application worker risks of concern. Similar to EPA's review of AMVAC's April 2024 proposal, EPA finds remaining risks of concern after considering all feasible mitigation measures.

A. Mitigation Proposals Prior to AMVAC's April 2024 Proposed Product Label

Prior to AMVAC's April 2024 proposed product label, AMVAC proposed a number of mitigation options, including restricting use patterns and reduced application rates, for DCPA to radish, Brassica (cole) leafy vegetables, and onions and restricting the formulation type (liquid formulation only). Mitigation was also proposed by AMVAC that would restrict application to groundboom and chemigation only and would require handlers to use engineering controls with gloves for all activities. In addition, REIs of 10 days and 21 days were proposed by AMVAC for post-application activities such as scouting and hand-set irrigation, respectively. For spray drift, AMVAC's proposed mitigations initially included a label requirement for medium/coarse

droplets, use of a low boom, and a 150 ft buffer. However, risks of concern still remained for occupational handlers, occupational post-application workers and bystanders even after consideration of these mitigations.

B. Mitigations Proposed on AMVAC's April 2024 Product Label

In April 2024, AMVAC submitted an amended product label significantly reducing the use pattern and incorporating additional restrictions to address remaining risk concerns. On AMVAC's amended product label, many of the same restrictions noted above were incorporated, including the reduced application rate and requirement of engineering controls plus additional PPE. The following additional restrictions were proposed by AMVAC: applications only to radish and Brassica (cole) leafy vegetables, limitation of usage to CA and AZ, designation of the product as a restricted use pesticide (RUP), inclusion of a 200-foot buffer and low boom release height, restriction of handheld equipment applications, REIs for various activities ranging from 10 days to 21 days, restriction to banded ground applications, and restrictions on the amount of product handlers could use per day. These mitigations impact the occupational handler, occupational post-application worker, and bystander scenarios.

1. Analysis of AMVAC's proposed mitigations for occupational handlers.

The restrictions of handheld equipment and the restriction to banded ground applications would result in only groundboom applications being allowed on the product label. Banded applications consist of a 12-inch band along a 24-inch row and would essentially reduce the application area by 50% because only half of the row is sprayed. Therefore, the banded groundboom scenarios assessed include a reduction in the area treated input from the default of 80 acres to 40 acres. This results in an increase in the combined (dermal + inhalation) MOEs, but not enough to reach the LOC of 100. MOEs range from 32 for applicators to 41 for mixers/loaders when considering banded applications.

Incorporating the additional restrictions on the amount of product that can be handled per day further reduces exposures and results in a combined MOE (dermal plus inhalation) of 98 for

both mixers/loaders and applicators (LOC = 100). However, EPA does not typically approve labeling that restricts the amount of product that individual handlers are allowed to use for several reasons. First, there are various kinds of tasks individual handlers may need to do as part of an application, such as mixing the product, loading application equipment, using specific equipment, cleaning, repairing, or maintaining application equipment, and disposing of pesticides or materials with pesticide residue. These multiple activities can all lead to exposure, and make it difficult to adequately reduce exposure through a simple label restriction on the amount of a pesticide handled each day.

At present, there is also no mechanism in place through which users can track compliance with the proposed daily amount handled limitations. While AMVAC proposed to classify end use products containing DCPA as a RUP, which requires certain information to be retained concerning the application of a RUP (*e.g.*, the total amount applied by a certified applicator and others under the certified applicator's direct supervision), the information required to be recorded does not include tracking the amounts of product individual handlers may use or the identity of handlers participating in an application.

Without a mechanism for reliably tracking the amounts of product handled per day, across different handling tasks such as mixing, loading and applying the pesticide, it would be very difficult to enforce this label requirement. Without a way to provide clear limits for all handler tasks, and ensure compliance with a limit to the amount of product handled each day for each handler, EPA determined this mitigation measure would not adequately address these handler risks.

2. Analysis of AMVAC's proposed mitigations for occupational post-application.

AMVAC's April 2024 proposed product label limits use to cole crops and radish and only allows for applications over transplants for certain cole crops. Under AMVAC's April 2024 proposed product label, MOEs on the day of application (12 hours after application) are still of concern and MOEs continue to be of concern up until 28 or more days later.

3. Analysis of AMVAC's proposed mitigations for bystanders.

AMVAC proposed requiring a 200-foot buffer for a low boom height groundboom spray, which would result in no spray drift risks of concern for adults (including pregnant individuals) (all MOEs \geq LOC of 30). Implementing this change proposed by AMVAC would address EPA's risk concerns for bystanders.

C. Mitigations Proposed on AMVAC's May 2024 Product Label

AMVAC's May 2024 proposed product label did not include additional mitigations to address the occupational handler nor the bystander scenarios. The same mitigations which addressed the bystander risks that were included on AMVAC's proposed April 2024 label were present on AMVAC's proposed May 2024 label. The same mitigations AMVAC proposed on the April 2024 label (*i.e.*, restrictions on the amount of product handled per day) to address the occupational handler risks were present on AMVAC's proposed May 2024 label; however, as noted above, without a way to provide clear limits for all handler tasks, and ensure compliance with a limit to the amount of product handled each day for a handler, EPA determined this mitigation measure would not adequately address the handler risks.

AMVAC proposed additional mitigations to address the occupational post-application worker risks of concern. AMVAC's May 2024 proposed product label prohibits applications over transplanted crops, which would address the identified post-application risk concerns. Implementing AMVAC's proposed change would address EPA's risk concerns for occupational post-application workers.

While the proposed mitigations on AMVAC's May 2024 product label would address the risk concerns related to occupational post-application workers and bystanders, EPA still has concerns related to occupational handlers and does not feel that AMVAC's proposed mitigations will adequately address all of the identified risks of concern, leaving the current approved product label in use. As noted in the May 2023 ORE Assessment, use under the current approved product label can result in pregnant individuals being exposed to DCPA at levels greater than the

level at which adverse effects were observed in the CTA. EPA has concerns that pregnant individuals may be exposed to DCPA at levels higher than those that cause fetal thyroid hormone disruption, but at which no thyroid effects would occur in the pregnant individual. There are unknown amounts of existing DCPA product in the hands of users which may lead to the serious and significant health outcomes described in this Emergency Order.

IX. Procedural Matters

With this Emergency Order the Agency has suspended the registrations of all pesticide products containing DCPA. The Emergency Order expressly prohibits any further sale, distribution, or use of any pesticide product containing DCPA, including federally registered products and products registered pursuant to FIFRA section 24(c) and 40 CFR 162.152. The registrant of products affected by the Emergency Order may request an expedited Agency hearing on the question of whether an imminent hazard exists. This unit explains how to request an expedited hearing, the consequences of requesting or not requesting an expedited hearing, and the procedures which will govern any expedited hearing in the event one is requested.

Alternatively, FIFRA section 6(c)(4) provides that a registrant—or other interested person, with the concurrence of the registrant—may seek immediate review of this Emergency Order in an appropriate district court. Such review shall be solely to determine whether the Emergency Order of suspension was arbitrary, capricious or an abuse of discretion, or whether the Emergency Order was issued in accordance with the procedures established by law. The registrant or other interested person need not request an expedited hearing pursuant to FIFRA section 6(c)(2) before seeking review in district court. *Love*, 858 F.2d at 1354.

A. Procedures for Requesting an Expedited Hearing

The registrant of a pesticide product containing DCPA may request an expedited hearing concerning the Agency's determination that an imminent hazard exists. Hearings must comply with the Agency's Rules of Practice Governing Hearings, 40 CFR part 164. These procedures establish the following requirements:

(1) Each hearing request must specifically identify by registration or accession number each individual pesticide product concerning which a hearing is requested, 40 CFR 164.121(a)(3) and 164.22(a);

(2) Each hearing request must be accompanied by a document setting forth specific objections to the Agency's findings pertaining to the question of imminent hazard and state the factual basis for each such objection, 40 CFR 164.121(a)(3) and 164.22(a); and

(3) Each hearing request must be received by the Office of the Hearing Clerk, FIFRA section 6(c)(2); 40 CFR 164.121(a)(2) and 164.5(a).

Failure to comply with any one of these requirements will invalidate the request for a hearing.

Any person requesting a hearing is strongly encouraged to file such requests electronically via the EPA OALJ's E-filing system at: https://yosemite.epa.gov/OA/EAB/EAB-ALJ_Upload.nsf/HomePage?ReadForm. If a person opts to file by US mail or commercial delivery service, said party shall notify the OALJ Hearing Clerk *every time* it files a document, which must all be submitted to the following address:

Office of Administrative Law Judges
U.S. Environmental Protection Agency
Attn: Mary Angeles, Headquarters Hearing Clerk
Mail Code 1900R, WJC East Mailroom 1309
1200 Pennsylvania Avenue, NW
Washington, DC 20460

B. Effective Date of Emergency Order

This Emergency Order is effective immediately upon signature, regardless of whether a registrant requests an expedited hearing concerning the question of imminent hazard. If an expedited hearing is requested, this Emergency Order will remain in effect during any expedited hearing and consistent with the Administrator's final order on the issue of suspension. The final order to be issued by the Administrator or his delegate after any expedited hearing may retain the Emergency Order of suspension, modify it, or rescind it. Regardless of whether a registrant requests a hearing on this Emergency Order, the suspension shall be lifted automatically if EPA

fails to issue a Notice of Intent to Cancel for the DCPA products at issue within 90 days from issuance of this Emergency Order.

C. Hearing Procedures

If a registrant of a DCPA product submits a valid request for an expedited hearing, that hearing must commence within 5 days of receipt of the hearing request unless the registrant and the Agency agree that it will commence at a later time (FIFRA section 6(c)(2)). Valid requests received subsequently may be consolidated with requests received prior to commencement of the suspension hearing. Any suspension hearing will be limited to the question of whether an imminent hazard exists (FIFRA section 6(c)(1)) and no parties other than affected registrants and the Agency will be permitted to participate actively in the hearing (FIFRA section 6(c)(3)). However, other persons adversely affected may file proposed findings and conclusions and briefs in support thereof. 40 CFR 164.121(e)(3) and (j).

Once the presentation of evidence has been concluded, FIFRA section 6(c)(2) provides that the Administrative Law Judge will have 10 days to submit recommended findings and conclusions to the Administrator and the Administrator will have 7 days to issue a final order on the issue of suspension. Additional time requirements are set forth at 40 CFR 164.121(j).

D. Separation of Functions

EPA's Rules of Practice forbid anyone who may take part in deciding this case, at any stage of the proceeding, from discussing the merits of the proceeding *ex parte* with any party or with any person who has been connected with the preparation or presentation of the proceeding as an advocate or in any investigative or expert capacity, or with any of their representatives (40 CFR 164.7).

Accordingly, the following EPA offices, and the staffs thereof, are designated as the judicial staff to perform the judicial function of EPA in any administrative hearing on the issue of imminent hazard: The Presiding Officer, the Environmental Appeals Board, the Administrator, the Deputy Administrator, and the members of the staff in the immediate office of

the Administrator and Deputy Administrator. None of the persons designated as the judicial staff may have any *ex parte* communication with the trial staff or any other interested person not employed by EPA on the merits of any of the issues involved in this proceeding, without fully complying with the applicable regulations. 40 CFR 164.7.

Authority: 7 U.S.C. 136 *et seq.*

Dated: August 2, 2024.

Michael S. Regan

Administrator.

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