

408(d)(2) of the FFDCA; however, EPA has not fully evaluated the sufficiency of the submitted data at this time or whether the data support granting of the petition. Additional data may be needed before EPA rules on the petition.

A. Residue Chemistry

1. *Plant metabolism.* Residue chemistry data are not generally required by EPA regarding tolerance exemption petitions. Consequently, no plant metabolism data have been generated.

2. *Analytical method.* Since this petition is for an exemption from the requirement of a tolerance, an enforcement analytical method for cis-isomer of 1-(3-chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride is not needed.

3. *Magnitude of residues.* Based on the negligible amount of cis-isomer of 1-(3-chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride to be used in final product formulations (0.14% by weight (wt) or less), the recommended frequency and rates of application to growing crops, and the hydrolysis characteristics of cis-isomer of 1-(3-chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride with the rapid degradation action of formaldehyde, the Dow Chemical Company believes that residues are expected to be essentially undetectable and not toxicologically significant.

B. Toxicological Profile

In the Dowicil CTAC Reregistration Eligibility Document (RED), dated April 1995, EPA completed its assessment of the potential human health and environmental risks associated with the active ingredient non-food uses of the cis and trans isomer mixture of 1-(3-chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride and the cis-isomer of 1-(3-chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride. Due to the similarities of the two active ingredients the Agency accepted toxicology studies conducted using either the cis and trans isomer mixture or the cis isomer only. Thus, the existing data base includes toxicity studies that were performed with the cis-isomer and the toxicity studies that were performed with a mixture of the cis and trans isomers.

1. *Acute toxicity—i. Acute oral.* Cis-isomer of 1-(3-chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride was administered by single-dose gavage to 6 groups of 6 rats/sex/dose at dosages of 200, 400, 800, 1,600, 3,200, and 6,300 milligrams/kilogram (mg/kg). Clinical signs of lethargy, diarrhea, and lacrimation, were observed at the 800, 1,600, and 3,200 mg/kg dose groups.

Body tremors and exudate staining of the nares were also seen in the 3,200 mg/kg group. Animals were observed for 7 days including the day of treatment. There were no mortalities in the 200, 400, 800, and 1,600 mg/kg dose groups. Five of six mortalities occurred in the 3,200 mg/kg dose group within 4 days of treatment, and 6/6 mortalities in the 6,300 mg/kg dose group on day-1 of treatment. All animals which survived gained weight during the observation period. There were no treatment-related changes on gross necropsy. The oral lethal dose (LD)₅₀ (95% confidence interval) was 2,664 mg/kg for males and females combined.

ii. *Acute dermal.* Cis-isomer of 1-(3-chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride was administered to four rabbits per dose level. Each dose group was topically treated for 24 hours with 160, 320, 630, 1,300, 2,500, or 5,000 mg/kg of undiluted test material (moistened with 5 meters/Liter (m/L) of distilled water) and with 250, 500, 1,000, and 2,000 mg/kg of the material as a 50% aqueous solution. In the undiluted test group, mortality rates were as follows: 160 mg/kg (0/4); 320 mg/kg (1/4); 630 mg/kg (1/4); 1,300 mg/kg (4/4); 2,500 mg/kg (2/4); 5,000 mg/kg (3/4).

The acute dermal LD₅₀ (95% confidence interval) was 923 mg/kg for males and females combined with undiluted test material. Lethargy and anorexia were reported in the surviving animals. Topical reactions ranging from slight erythema to marked swelling and necrosis were observed. Treatment-related necropsy lesions (decreased abdominal adipose tissue, serous atrophy of the remaining adipose tissue and thymic atrophy) were observed at the two highest dose levels. The lesions were judged to be the result of stress and decreased appetite.

The number of mortalities observed in the 50% aqueous preparation was as follows: 250 mg/kg (1/4); 500 (3/4); 1,000 (1/4); 2,000 (4/4).

The acute dermal LD₅₀ (95% confidence interval) was 605 mg/kg for males and females combined. Lethargy and anorexia were observed in the three lowest dose groups; lethargy and rapid, shallow breathing were seen in the highest dose group. Topical reactions ranging from slight edema to marked necrosis were reported. There were no lesions on necropsy attributable to treatment.

iii. *Acute inhalation.* In an acute inhalation study 10 rats (5 males/5 females) were exposed to 1-(3-chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride and cis-1-(3-chloroallyl)-3,5,7-triaza-1-

azoniaadamantane chloride. There were no mortalities during the exposure period nor during the post-exposure observation period. There was generalized soiling and test material stains on fur. All animals exhibited a significant weight loss (9–11%) in the first few days post-exposure. Weight gain resumed 4 days post-exposure to end of study. Normal activity throughout the test period continued to the end of the study. One animal had unilateral corneal opacity. All other tissues and organs examined were normal. The acute inhalation toxicity lethal dose (LC)₅₀ to 1-(3-chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride and cis-1-(3-chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride was greater than 4.7 milligrams/Liter (mg/L).

iv. *Primary eye irritation.* In a primary eye irritation study, nine New Zealand white rabbits had a 1 gram dose of cis-isomer of 1-(3-chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride instilled into the conjunctival sac of the right eye of each of six rabbits (Groups A). The same procedure was followed with three other rabbits (Group B), however these eyes were washed with tap water after a 30-second exposure period. The left eye served as an untreated control in all of the animals. Twenty four hours prior to treatment, the eyes of all nine rabbits were examined using 5% fluorescein stain and found to be normal. The eyes were examined 1, 2, 3, 4, and 7 days after the instillation and scored for evidence of damage to the conjunctival (redness, chemosis, and discharge), cornea (degree of opacity and area of cornea involved), and iris (area involved). In Group A rabbits, there was slight (3/6) or moderate (1/6) conjunctival redness and slight (1/6) conjunctival discharge. In Group B rabbits, there was slight (2/3) conjunctival redness. No corneal opacity was observed with either group. Signs of irritation were absent 72 and 48 hours in Groups A and B, respectively. The test material was determined to be a slight primary eye irritant.

v. *Primary dermal irritation.* In a primary dermal irritation study, 0.5 grams of undiluted cis-isomer of 1-(3-chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride was applied to the backs of six rabbits to an intact and an abraded site on each animal. The areas were covered with gauze patch and then a piece of heavy-gauge Saran® film. Elizabethan collars were placed on the rabbits to prevent ingestion. After 24 hours of exposure, the bandages were removed and each site was scored on a scale of 0 (normal) to 4 (severe) for dermal irritation (erythema and edema) then, and again at 72 hours from the