3. Related Proceedings and Previous Requests for Import Relief (19 C.F.R. § 351.202(b)(4))

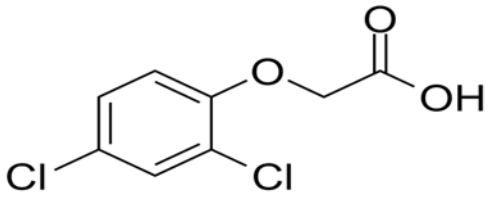
There are no related proceedings to this Petition and Corteva has not filed for import relief pursuant to section 337 of the Act, 19 U.S.C. § 1337, or section 201 or 301 of the Trade Act of 1974,19 U.S.C. §§ 2251 or 2411, or section 232 of the Trade Expansion Act of 1962, 19 U.S.C. § 1862, with respect to 2,4-D.

C. Product Scope of the Subject Merchandise (19 C.F.R. § 351.202(b)(5))

1. Product Description

This petition covers 2,4-Dichlorophenoxyacetic acid, commonly referred to as 2,4-D. 2,4-D is an herbicide active ingredient that contains carbon, hydrogen, chlorine, and oxygen. Herbicides are a subcategory of pesticides. In its pure form, 2,4-D acid is a dry crystalline solid. For practical application as an herbicide or plant-growth regulator, 2,4-D must be formulated to readily disperse upon application and to suitably mix with water. Accordingly, it is converted into various derivative forms, including salts, and esters. Products containing 2,4-D derivatives, like its salt and ester forms, are blended with other active ingredients, chemicals and/or water to create end-use crop protection products. Over 1,500 herbicide products contain 2,4-D as an active ingredient. Products containing 2,4-D may come in the form of liquids (concentrated or ready-to-use), dusts, or granules.

2,4-Dichlorophenoxyacetic acid



2. Technical Characteristics and End-Uses

2,4-D is a synthetic auxin and growth regulator. A synthetic auxin is a type of herbicide active ingredient that mimics auxin, a plant hormone that regulates many aspects of growth. Synthetic auxin herbicides bind to hormone receptors in plant cells and cause a chain of events within the plant that leads to rapid and uncontrolled growth. These herbicides specifically cause vascular tissue cells that carry water and nutrients to divide and grow at such a rate as to cause stem curl-over, leaf withering, and eventual plant death. *See* **Exhibit I-5**. Additional information on the physical characteristics of 2,4-D is provided in **Exhibit I-6**.

2,4-D is used for broadleaf weed control in agricultural and nonagricultural settings, and it is registered for use in both terrestrial and aquatic environments. Registered uses include application to field, fruit, and vegetable crops, including soybeans, corn, wheat, barley, oats, sugar cane, rice, citrus, hazelnuts, stone fruits, grapes, nuts, and asparagus. It is registered for use on pastures and rangelands, residential lawns, roadways, aquatic sites, croplands, and forestry applications. *See* **Exhibit I-7**.

3. Manufacturing Process

There are two methods for synthesizing 2,4-D: chloroxidizing phenol with chlorine and then condensation with chloroacetic acid; or condensation that is then followed by the chlorination process. *See* **Exhibit I-8**.

2,4-D is most commonly converted into either an amine salt or ester, with respective usage dependent on array of factors, ranging from crop selection, environmental conditions, and other variables. Amine salts are made by reacting amines with strong acids. An amine is any member of a family of nitrogen-containing organic compounds that is derived, either in principle or in practice, from ammonia (NH_3). An ester includes any of a class of organic compounds that react with water to produce alcohols and organic or inorganic acids.

With respect to 2,4-D, the amine salt derivatives are produced when the acid of 2,4-D reacts with an amine, while esters are formed when the 2,4-D acid reacts with an alcohol. 2,4-D salt and ester derivatives include: sodium salt, diethanolamine salt, dimethyl amine salt, isopropylamine salt, triisopropanolamine salt, butoxyethyl ester, ethylhexyl ester, and isopropyl ester. There are nine derivative forms of 2,4-D that are currently on the U.S. market, with dimethyl-anime salt ("DMA") and 2-ethylhexyl ester accounting for approximately 90-95% of global 2,4-D use. Attached at **Exhibit I-9** is a table with the physical and chemical properties of the 2,4-D derivatives on the market.

Generally, 2,4-D esters have higher vapor pressures than 2,4-D amine salts. Higher vapor pressures result in increased volatilization. Amine salts are generally less volatile than esters. Amine derivatives of 2,4-D are therefore typically used in landscape settings and scenarios when drift is a primary concern. Ester derivates, on the other hand, are typically more active on weeds in comparison to amine salts. This is due to the fact that esters are more soluble when in contact

with the plant's waxy cuticle. Plants are more likely to quickly absorb esters, as amines are more water soluble. Once the chemical is absorbed into the plant (either amine salt or ester), it is converted to the active acid, which in turn injures or kills plants that are susceptible to the respective herbicide.

4. U.S. Tariff Classification

2,4-Dichlorophenoxyacetic acid is classified under HTS Code: 2918.99.2010, as "2,4-dichlorophenoxyacetic Acid; Its Salts and Esters." This subheading describes 2,4-D as well as its salts and its esters *eo nomine*. Formulations including 2,4-D and its derivative products are classified under 3808.93.0500 and 3808.93.1500. The relevant HTSUS numbers are attached as **Exhibit I-4**.

5. Proposed Scope Language

Based on the product description and production process described in the sections above, this petition requests the following scope language:

> The merchandise covered by this investigation is 2,4-dichlorophenoxyacetic acid ("2,4-D"). 2,4-D has the Chemical Abstracts Service ("CAS") registry number of 94-75-7 and the chemical formula $C_8H_6Cl_2O_3$. The 2,4-D component of any derivative products of 2,4-D, including but not limited to, amine salt and ester forms of 2,4-D are covered by the scope of the order.
>
> Salt and ester forms of 2,4-D include, but are not limited to, 2,4-D salt (CAS 2702-72-9), 2,4-D diethanolamine salt (CAS 5742-19-8), 2,4-D dimethyl amine salt (CAS 2008-39-1), 2,4-D-isopropylamine salt (CAS 5742-17-6), 2,4-D tri-isopropanolamine salt (CAS 32341-80-3), 2,4-D BEE (CAS 1929-73-3), 2,4-D 2-ethylhexylester (CAS 1928-43-4), and 2,4-D -isopropylester (CAS 94-11-1). All 2,4-D, as well as the 2,4-D component of its salt and ester forms, is covered by the scope irrespective of purity, particle size, or physical form.
>
> The conversion of a 2,4-D salt or ester from a subject 2,4-D acid, or the formulation of nonsubject merchandise with the subject 2,4-D, its salts, and its esters in the country of manufacture or in a third country does not remove the subject 2,4-D, its salts, or its esters from the scope. For any such formulations, only

the 2,4-D, 2,4-D salt, and 2,4-D ester components of the mixture is covered by the scope of the order.

2,4-D, its salts, and its esters are classified under Harmonized Tariff Schedule of the United States (HTSUS) subheading 2918.99.2010. Other merchandise subject to the current scope, including the abovementioned formulations that may be classified under 3808.93.0500 and 3808.93.1500. The HTSUS subheadings and CAS registry number are provided for convenience and customs purposes. The written description of the scope of the petition is dispositive.

D. Targeted Countries Concerned (19 C.F.R. § 351.202(b)(6))

The 2,4-D described in the scope in this Petition is produced in and exported from China and India.

E. Foreign Producers and Exporters of Subject Merchandise (19 C.F.R. § 351.202(b)(7)(i)(A))

Pursuant to 19 C.F.R. § 351.202(b)(7)(i)(A) of the Department's regulations, Petitioner identified known producers and/or exporters of the subject merchandise from the countries concerned through industry knowledge and data from the U.S. International Trade Commission's DataWeb. Based on this research, Petitioner provided the names of all identified producers and exporters of 2,4-D that are reasonably available. *See* **Exhibit I-2**. To the extent specific contact information is not available, Petitioner has so indicated.

F. Calculations of Export Price and Normal Value of the Subject Merchandise (19 C.F.R. § 351.202(b)(7)(i)(B))

Petitioner provided separate volumes which contain information reasonably available from public sources demonstrating that 2,4-D from China and India are being sold in the U.S. at less than fair value within the meaning of section 731 of the Act. The calculations of export price and normal value to arrive at the preliminary antidumping duty margin calculations required by regulations are provided in Volume II, with respect to China, and Volume III, with respect to India.