

Category B Evaluation Report

Application Number: 2006-0476
Application: Category B, subcategories: 1.3 (Specifications Statement) and 3.13 (Precautionary Statement)
Product: Diquat Technical, Herbicide
Registration Number: 20218
Active ingredients (a.i.): Diquat dibromide (DIQ) at 41.1 % w/w
PMRA Document Number: 1429047

Background

Introduced by ICI Plant Protection Division (now Syngenta AG) and first marketed in 1962 (GB patent 785732), diquat technical was first registered in Canada in May 1987. Diquat technical is to be used only in the manufacture of a herbicide which is registered under the Pest Control Products Act (for example Reglone 250 Liquid Herbicide, Reg. No.26396). Diquat dibromide herbicides have various uses such as potato vine killing, desiccation of pulse, oilseed and legume forage seed crops, weed control in vegetable and field crops, control of corn spurry in oats and weed control in non-crop land, and chemical mowing. For specific details of uses, application rates and methods, precautions, restrictions, and personal protective equipment requirements, refer to the product label.

Purpose of Application

The purpose of this submission is to update the specifications for this integrated system product (ISP) from minimal to nominal and from g/L to % w/w as well as to amend the label precautions. The amendments to the label precautions consisted of an update of the first aid statement wording with new advice concerning the induction of vomiting. In the toxicological information statement, a sentence was added to emphasize the importance of reacting quickly in case of ingestion of the product, and finally, a list of protective equipment to be worn when handling the product was added in the precautions statement.

Chemistry Assessment

Common Name: Diquat dibromide
IUPAC Chemical Name: 1,1'-ethylene-2,2'-bipyridylium dibromide
CAS Chemical Name: 6,7-dihydrodipyrido[1,2-a:2',1'-c]pyrazinediium dibromide

Diquat Technical has the following properties:

Property	Result
Colour and physical state	yellow crystalline solid
Nominal concentration	22%
Odour	none
Density	1.25 g/mL @ 20°C 1.61 g/cm ³ @ 25°C
Vapour pressure	$< 1 \times 10^{-8}$ kPa (at 25° C)
pH	4.5-7.5
Solubility in water	712 g/L at pH 5.2 718 g/L at pH 7.2 713 g/L at pH 9.2
n-Octanol/water partition coefficient	Log K _{ow} = -4.6 (pH 7)

Health Assessment

Toxicological data was not required to support the update in specification or change in precautionary statements. The change in label statements is an improvement, reflecting current practices.

Maximum Residue Limit(s)

The request to update the specifications for Diquat Technical is not expected to alter the residues in food and feed crops treated with end use products containing Diquat Technical. Therefore, no increase in dietary exposure to diquat is anticipated.

Environmental Assessment

An environmental assessment was not required to support the change of precautionary statements on the label, nor was an environmental assessment required to update the product specifications for this technical active (change from minimal to nominal and from g/L to % w/w). There are no environmental concerns resulting from the label amendment or from the product specification form amendment.

Conclusions

The PMRA has completed an evaluation of diquat technical and has found the information sufficient to update the specifications for this integrated system product (ISP) from minimal to nominal and from g/L to % w/w as well as to amend the label precautions.

Reference List

Chemistry Assessment

7.1.1 Studies/Information Provided by Applicant/Registrant

- 1135024 2005, Chemistry Requirements for the Registration of a Technical Grade Active Ingredient (TGAI) - Diquat Technical Herbicide, Syngenta Crop Protection, DACO: 2.1,2.2,2.3,2.3.1,2.4,2.5,2.6,2.7,2.8,2.9.
- 1135026 2005, Diquat Technical - Detailed Manufacturing Process, DACO: 2.11.1,2.11.3
- 1135027 2005, Diquat Technical - Discussion of Formation of Impurities, DACO: 2.11.4,2.13.4
- 1135028 2005, Diquat Technical Certification of Limits, DACO: 2.12.1
- 1135029 2005, Diquat Technical - Analytical Methodology/Method Validation, Confirmation of Identity, Note to the Reviewer. Diquat: Detailed Analysis of Technical Materials Representative of Large Scale Production, Zeneca Agrochemicals, RJ3081B, DACO: 2.13.1,2.13.
- 1135030 2001, Diquat Dibromide - Chemical and Physical Properties of Pure Material. Includes Note to the Reviewer and Summary Table This Summary covers DACO 2.14.1-2.14.15, Syngenta- Jealott's Hill International, RJ3168B, DACO: 2.14.

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