DATE OUT: 12/AUG/2004

SUBJECT: PRODUCT CHEMISTRY REVIEW:End-Use Product:[x]; PRODUCT NAME: Illoxan 3EC Herbicide; **EPA REG. No.:** 432-1231; **COMPANY NAME:** Bayer Environmental Science; **Data Package No.:** 306604; **EPA RECEIVED DATE:** 10/AUG/04; **Supporting Data:** MRIDs # 454540-01, # 456807-01, and # 432339-01; **Action Code:** 674

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INTRODUCTION:

The registrant, Bayer Environmental Science, submitted product chemistry data in MRIDs # 454540-0; # 456807-01, and # 432339-01; the CSF, a basic formulation dated 29/JUL/2004; and a draft label received by the Agency on 27/JUL/04, requesting for product reregistration of Illoxan 3 EC Herbicide, Reg. No. 432-1231.

FINDINGS:

1. The submitted data in MRID # 454540-01 fulfill the data requirement for the Guidelines 61-1 (830-1550, Product Identity and Composition), 61-2a (830-1600, Description of Materials Used to Produce the Products), 61-2b (830-1650, Description of Production of the Product), 61-3 (830-1670, Discussion of Formation of Impurities), 62-2 (830-1750, Certified Limits), 62-3 (830-1800, Enforcement Analytical Method), 63-2 (830-6302, Color), 63-3 (830-6303, Physical State), 63-4 (830-6304, Odor), 63-7 (830-7300, Density/Bulk Density), 63-12 (830-7000, pH), 63-14 (830-6314, Oxidizing/Reducing Action), 63-15 (830-6315, Flammability), 63-18 (830-7100, Viscosity). The submitted data in MRID # 456807-01 satisfy the data requirement for the Guidelines 63-17 (830-6317, Storage Stability) and 63-20 (830-6320, Corrosion Characteristics).

The data requirements for the Guidelines 62-1 (830-1700, Preliminary Analysis), 63-16 (830-6316, Explodability), 63-19 (830-6319, Miscibility) and 63-21 (830-6321, Dielectric Breakdown Voltage) are not applicable to this product and are waived. No additional data are required.

The submitted data in MRID # 432339-01 are not adequate to support the product chemistry data requirements for this subject product.

2 The submitted CSF, a basic formulation dated 29/JUL/2004 has been filled out completely and correctly. The nominal concentration, upper limit, and lower limit of the active ingredient in the CSF are in accordance with the regulation of 40 CFR 158.175 (b) (2). All inert ingredients claimed in the CSF have been cleared for use in pesticide formulation. The CSF is acceptable.

3 (a). Except for a minor revision required for the draft label as noted in # 3 (b), the active ingredient statement is adequate.

3 (b). (1) A statement "The product contains petroleum distillate." must be placed directly under the active ingredient statement. (2) The flash point of the product is 102.7°F which triggers a requirement of placement of a warning statement "Combustible. Do not use or store near heat or open flame." directly under the Physical or Chemical Hazards heading. (3) For consistency, a statement: "Pesticide Storage: Do not use or store near heat or open flame. Do not store below 20°F." must be placed directly above the pesticide disposal statement. The revision of the draft label can be done after label review.

CONCLUSION:

The registrant has satisfied the product chemistry data requirements for reregistration of this subject product. The Agency will have no objection to reregistration of Illoxan 3 EC Herbicide, Reg. No. 432-1231.

Group A. Product Identity, Composition, Manufacturing, Certified Limits, and Analytical Method.

Guidelines and description	MRID #	Has the data requirement been fulfilled
830-1550 Product Identity and Composition.	454540-01	Yes
830-1600 Description of Materials Used to Produce the Product.	454540-01	Yes
830-1650 Description of Formulation Process.	454540-01	Yes
830-1670 Discussion of Formation of Impurities	454540-01	Yes
830-1700 Preliminary Analysis.	N/A	N/A
830-1750 Certified Limits.	CSF	Yes
830-1800 Enforcement Analytical Method:	454540-01	Yes

Group B: Physical/Chemical Properties (40 CFR 158.190).

Guideline Reference Number (GRN)/Title	Data or Qualitative Description/ Method Used	MRID #	Has the Data Requirement Been Fulfilled
830-6302 Color	Amber color.	454540-01	Yes
830-6303 Physical State	Liquid.	454540-01	Yes
830-6304 Odor	Highly pungent odor.	454540-01	Yes
830-6314 Oxidizing/Reducing Action	No reaction or change in temperature at initial and after 24 hours with water, monoammonium phosphate, zinc was observed. Some change in color of the test substance but no change in temperature when the test substance mix with hexane or potassium permanganate was observed.	454540-01	Yes
830-6315 Flammability	Flash point: 39.3 ± 1.3°C or 102.7 °F. Pensky-Martens Closed Cup Tester ASTM D 93-96 Method.	454540-01	Yes
830-6316 Explodability	N/A, the product contains no explosive.	N/A	N/A
830-6317 Storage Stability	The test substance was packaged in commercial packaging and stored at 25°C and 50% relative humidity for 0, 3, 6, and 12 months. The active ingredient of the product was analyzed by GC at these sampling intervals to be at 35.2, 36.1, 35.0, and 35.2%, respectively. The test results indicated that the active ingredient in the product is stable after one year of storage.	456807-01	Yes
830-6319 Miscibility	The test substance is miscible in corn oil and xylene at the high and low mix rates.	454540-01	Yes
830-6320 Corrosion Characteristics	The test substance was packaged in commercial packaging and stored at 25°C and 50% relative humidity for 0, 3, 6, and 12 months. On corrosive effects were observed on the containers.	456807-01	Yes
830-6321 Dielectric Breakdown Voltage	N/A, the product is not to be applied the electric equipment.		N/A
830-7000 pH	pH : 4.91 (1% w/w in water at 25°C.)	454540-01	Yes
830-7100 Viscosity	6.19 ± 0.08 cSt. Cannon-Fenske Routinel size 100 at 25°C.	454540-01	Yes
830-7300 Density/ Bulk Density	1.035 ± 0.003 g/cm^3 or 8.63 lbs/gal. at 25 °C.	454540-01	Yes

Confidential Appendix A

830-1550 Product Identity and Composition. (MRID # 454540-01)
The product contains active ingredient, diclofop-methyl [methyl-2-(4-(2,4-dichlorophenoxy)phenoxy) propanoate 34.7%.

830-1600 Description of Beginning Materials Used to Produce the Product. (MRID # 454540-01)

[redacted]

830-1650 Description of Formulation Process. (MRID # 454540-01)

[redacted]

830-1670 Discussion of Formation of Impurities. (MRID # 454540-01)

[redacted]

830-1700 Preliminary Analysis.

Not required. The starting material is an EPA registered product and the formulation process is not an integrated process.

830-1750 Certified Limits:

Diclofop-methyl: nominal, 34.7%; upper limit, 35.7%; lower limit, 33.7%..

[redacted]

830-1800 Enforcement Analytical method:
The active ingredient, diclofop-methyl, in the product was determined by the gas chromatography method.

Gas Chromatography method:
Instrument: HP 5890 A gas chromatograph equipped with flame ionization detector.
Column: DB-1 or equivalent, 30 m x 0.53 mm, 1.5 um film thickness.
Oven temperature: 250°C.
Injector temperature: 270°C.
Detector temperature: 300°C.

Carrier gas: helium flow 20 psi.
Internal standard: diphenyl phthalate 5 g in 1000 mL acetone.
It is a single point of calibration method of standard solution.

Validation of the Method:

Linearity:
The standard stock solutions were prepared at 0.3743, 0.5578, 0.7486, and 1.1156 mg/ml. They were injected into GC.
The linear coefficient between the concentrations and peak areas was 0.99997.

Precision:
The precision of the analytical method was determined by injecting the standard solutions of diclofop-methyl at concentration of 0.3735 and 1.1064 mg/ml in triplicates.
The mean response peak area ratio between the diclofop-methyl and the internal standard diphenyl phthalate for the standard concentration 0.3735 mg/ml was 0.3943 with standard deviation of 0.0038 and relative standard deviation of 1.0%.

The mean response peak area ratio between the diclofop-methyl and the internal standard diphenyl phthalate for the standard concentration 1.1064 mg/ml was 1.1367 with standard deviation of 0.0106 and relative standard deviation of 0.9%.

Recovery:
The mean recovery for the standard solution at 0.3735 mg/ml injected in triplicated was 100.6 with standard deviation of 1.0148%

The mean recovery for the standard solution at 1.1064 mg/ml injected in triplicated was 100.1 with standard deviation of 1.0%