UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

MEMORANDUM

DATE: **April 16, 2013**

SUBJECT: Science Review in Support of the Registration of Homobrassinolide 1%, Containing 1.0% Homobrassinolide as its Active Ingredient

Type of Data Review:	Product Chemistry, Human Health
Decision Number:	470631
DP Number:	409334
EPA File Symbol Number:	69361-GI
Chemical Class:	Biochemical
PC Code:	067700
Tolerance Exemptions:	40 CFR § 180.1297
MRID Nos.:	48968201-07; 49054901-02

FROM: Sadaf Shaukat, Biologist
Biochemical Pesticides Branch
Biopesticides & Pollution Prevention Division (7511P)

TO: Leonard Cole, Regulatory Action Leader
Biochemical Pesticides Branch
Biopesticides & Pollution Prevention Division (7511P)

NOTE : CONFIDENTIAL ATTACHMENT

ACTION REQUESTED

Mandava Associates, LLC has submitted an application on behalf of Repar Corporation for the manufacturing-use product (MP) 69361-GI Homobrassinolide 1% (registered source). This proposed EP contains 1.0% Homobrassinolide as its active ingredient. The product is intended for use into formulations to be used as plant growth regulators.

RECOMMENDATIONS AND CONCLUSIONS

1. **The product chemistry submission is SUPPLEMENTAL, but upgradeable pending resolution of the following deficiencies**:
   MRID 48968201: SUPPLEMENTAL, UPGRADEABLE
   MRID 49054900 (with attachments): SUPPLEMENTAL, UPGRADEABLE

   a. The registrant must provide an MSDS for one of their inert ingredients* from the same supplier listed on the CSF. The current submission includes an MSDS from a different supplier. Also, the trade name on the current MSDS does not match the CSF.
   b. The registrant must provide an MSDS for another inert ingredient* from the same supplier listed on the CSF. The current submission includes an MSDS from a different supplier.
   c. The waiver request for storage stability (OCSPP 830.6317) and corrosion characteristics (OCSPP 830.6320) is unacceptable (see MRID 49054900-attachment 5) for registrant's justification). The registrant must conduct a one-year storage stability/corrosion characteristics study. The registrant may propose an alternative method to conduct the study.

*please see Confidential Attachment for details

2. **The human health submission is SUPPLEMENTAL, but upgradeable pending resolution of the following deficiency**:

MRID 48968202: ACCEPTABLE	MRID 48968206: ACCEPTABLE
MRID 48968203: ACCEPTABLE	MRID 48968207: SUPPLEMENTAL, UPGRADEABLE
MRID 48968204: ACCEPTABLE	MRID 49054902: ACCEPTABLE
MRID 48968205: ACCEPTABLE	MRID 49054903: ACCEPTABLE

   a. The skin sensitization study (OCSPP 870.2600) is supplemental, but upgradeable pending resolution of the following deficiencies:
      i. There is no indication in the study that at least 3 induction treatments were conducted one week apart. The registrant must address this issue.
      ii. On page 16 of MRID 48968207, the paragraph under "instillation" reads incorrectly. It seems to have been copied and pasted from the acute eye irritation study (MRID 48968205). The registrant must correct this mistake.

STUDY SUMMARIES

Product Chemistry

Test Material: Homobrassinolide 1% (a.i., 1% homobrassinolide)

I. **PRODUCT IDENTITY AND COMPOSITION:** This application is for a manufacturing-use product named Homobrassinolide 1%. This product is a plant growth regulator. The active ingredient in this product (w/w) is 1.0% Homobrassinolide. The inert ingredients (w/w) are included in the confidential attachment. The CSF and product label are in agreement regarding the content of active ingredient in the product. The active ingredient name given on the product label does match the name given on the CSF. The CAS Nos. for the active and inert ingredients

are provided on the CSF. The density, pH, and flash point boxes on the CSF are filled in, and the CSF is signed. A description of the starting materials and the formulation process was provided. A discussion of the formation of impurities was provided. See MRID 48968201 for more details.

II. DESCRIPTION OF STARTING MATERIALS AND FORMULATION PROCESS: A description of the starting materials and formulation process was provided in MRID 48968201.

III. DISCUSSION OF FORMATION OF IMPURITIES: A discussion of the formation of impurities was provided in MRID 48968201.

IV. PRELIMINARY ANALYSIS: High Performance Liquid Chromatography was used.

V. CERTIFIED LIMITS: Table 1 lists the nominal concentrations and certified limits for the ingredients in Homobrassinolide 1% as given on the CSF. The certified limits for the active ingredient and the inerts are within the OPPTS 830.1750 recommended range.

TABLE 1. Nominal CSF concentrations and certified limits for Homobrassinolide 1%.[a]

Ingredients (CAS number)	PC Code	Purpose	Concentration (% by weight)		
			Nominal	Lower	Upper
Active Ingredient					
Homobrassinolide (80483-89-2)	067700	Active ingredient	1.00	0.95	1.05
Inert Ingredients					
See confidential attachment					

VI. ENFORCEMENT ANALYTICAL METHOD: High Performance Liquid Chromatography was used.

VII. PHYSICAL AND CHEMICAL PROPERTIES: Table 2 summarizes the physical and chemical properties of this product. Please see Table 2 in Confidential Attachment.

VIII. STORAGE STABILITY AND CORROSION CHARACTERISTICS: The registrant submitted waiver rationale in order to waive this data requirement (see MRID 49054900-attachment 5 for details). The waiver request will not be granted. The registrant stated that HPLC (along with other methods) may not be a sensitive method to detect the concentration of the active ingredient. The registrant may propose another method by which the entire product may be suitably tested for stability over the course of one year.

Human Health

Toxicity Categories for Homobrassinolide 1% (EP)

Acute Oral Toxicity (max dose 2000 mg/kg)	>2000 mg/kg, III (48968202)
Acute Oral Toxicity (max dose 5000 mg/kg)	>5000 mg/kg, IV (49054901)
Acute Dermal Toxicity (max dose 2000 mg/kg)	>2000 mg/kg, III (48968203)

Acute Dermal Toxicity (max dose 5000 mg/kg)	>5000 mg/kg, IV (49054902)
Acute Inhalation Toxicity	>4.45 mg/L, IV (48968204)
Primary Eye Irritation	Non-irritating, IV (48968205)
Primary Dermal Irritation	Non-irritating, IV (48968206)
Dermal Sensitization	Not a sensitizer (48968207)

All submitted studies were acceptable, except for the dermal sensitization study, which is categorized upgradeable, pending resolution of the stated deficiencies.

cc: Sadaf Shaukat, L. Cole, BPPD Science Review File, Manying Xue/IHAD/ARS:

CONFIDENTIAL ATTACHMENT

RECOMMENDATIONS AND CONCLUSIONS

3. **The product chemistry submission is SUPPLEMENTAL, but upgradeable pending resolution of the following deficiencies**:
   MRID 48968201: SUPPLEMENTAL, UPGRADEABLE
   MRID 49054900 (with attachments): SUPPLEMENTAL, UPGRADEABLE

   a. The registrant must provide an MSDS for [redacted] from the same supplier listed on the CSF. The current submission includes an MSDS from a different supplier. Also, the trade name on the current MSDS does not match the CSF. It reads [redacted] and the CSF reads [redacted]
   b. The registrant must provide an MSDS for [redacted] from the same supplier listed on the CSF. The current submission includes an MSDS from a different supplier.

STUDY SUMMARIES

Product Chemistry

Test Material: Homobrassinolide 1% (a.i., 1% homobrassinolide)

IX. **PRODUCT IDENTITY AND COMPOSITION:** This application is for a manufacturing-use product named Homobrassinolide 1%. This product is a plant growth regulator. The active ingredient in this product (w/w) is 1.0% Homobrassinolide. The inert ingredients (w/w) are [redacted] The CSF and product label are in agreement regarding the content of active ingredient in the product. The active ingredient name given on the product label does matches the name given on the CSF. The CAS Nos. for the active and inert ingredients are provided on the CSF. The density, pH, and flash point boxes on the CSF are filled in, and the CSF is signed. A description of the starting materials and the formulation process was provided. A discussion of the formation of impurities was provided. See MRID 48968201 for more details.

X. **CERTIFIED LIMITS:** Table 1 lists the nominal concentrations and certified limits for the ingredients in Homobrassinolide 1% as given on the CSF. The certified limits for the active ingredient and the inerts are within the OPPTS 830.1750 recommended range.

TABLE 1. Nominal CSF concentrations and certified limits for Homobrassinolide 1%.[a]

Ingredients (CAS number)	PC Code	Purpose	Concentration (% by weight)		
			Nominal	Lower	Upper
Active Ingredient					
Homobrassinolide (80483-89-2)	067700	Active ingredient	1.00	0.95	1.05
Inert Ingredients					
[redacted]					

[a]Data from CSF

XI. PHYSICAL AND CHEMICAL PROPERTIES: Table 2 summarizes the physical and chemical properties of this product. Please see Table 2 in Confidential Attachment.

GUIDELINE REFERENCE NO. (GRN)/TITLE	VALUE OR QUALITATIVE DESCRIPTION/METHOD(S) USED WHERE APPLICABLE AND REFERENCES	MRID OR REPORT NO.
-6302 Color	Pale yellow	48968201
-6303 Physical State	Clear liquid	48968201
-6304 Odor	None	48968201
-6313 Stability	Stable at ambient temperature (25°C) stability test not required for this product, only storage stability test required	48968201
-6314 Oxidation/Reduction: Chemical Incompatibility	Contains no oxidizing or reducing agents	48968201
-6315 Flammability/Flame Extension	Product is not flammable	48968201
-6316 Explodability	Product is not potentially explosive	48968201
-6317 Storage Stability	Waiver requested; justification included in package	49054900 (Attachment 5)
-6319 Miscibility	Soluble in water	48968201
-6320 Corrosion Characteristics	Waiver requested; product stored in plastic containers	48968201
-6321 Dielectric Breakdown Voltage	Product not used near electrical equipment	48968201
-7000 pH	4.4-5.5	48968201
-7100 Viscosity	80 cps @ 20 or 70°F	48968201
-7300 Density/Relative Density/Bulk Density	Specific gravity of 1.0-1.10 g/ml @ 25°C (77°F)	48968201
-7840 Solubility	Readily soluble in water	48968201