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| **Document Control - Document Revision & Approval History** | | | | | |
| **Revision** | **Pages** | **Prepared By** | **Reviewed By** | **Approved By** | **Date** |
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| **Purpose** | **The purpose of this procedure is to provide detailed instructions for separation of Myclobutanil from First Pass Distillate** |

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| **Definitions** | **Term** | **Definition** |
| **PPE** | **Personal Protection Equipment (PPE)** Items worn to protect employees from exposure to hazardous materials and prevention of injury. |
| **SDS** | **Safety Data Sheet (SDS)** Provides useful information on chemicals, describing the hazards the chemical presents, and giving information on handling, storage and emergency measures in case of an accident. |
| **LLE** | **Liquid-Liquid Extraction (LLE)** is a method to separate compounds based on their relativesolubilities in two different immiscible liquids |
| **SPE** | **Solid Phase Extraction (SPE)** sample preparation process by which compounds that are dissolved or suspended in a liquid mixture are separated from other compounds in the mixture according to their physical and chemical properties |
| **Saline** | Distilled water mixed with 3-5% Sodium Chloride (Table Salt) |

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| **References** | **Document Number** | **Document Title** |
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**Safety**

1. SDS Sheets: Available in the laboratory on all chemicals used in this process.
2. PPE: The following should be worn by all lab personnel while Remediating Pesticides:
   1. Splash goggle
   2. Lab coat
   3. Gloves

**Hazard Identification**

1. Preparation and Use:
   1. Distilled cannabis oil will be mixed with Heptane, washed with pH adjusted saline, mixed with CBleach, then passed over a MagSil-PR column.
      1. **Concentration**- Use full concentration of:

Heptane (Insert product name and purchase location)

Isopropanol (Insert product name and purchase location)

MagSil-PR (Purchase location)

CBleach (Purchase location)

* + 1. **Quantity**- 2 parts Heptane to 1 part Distilled Cannabis Oil

1 part Heptane to 1 part MagSil-PR

CBleach according to directions

2 parts MagSil-PR to 1 part Distilled Cannabis Oil

1 part Isopropanol to 1 part MagSil-PR

* + 1. **Frequency**- An initial volume of distilled oil is used. An initial volume of Heptane is used, more is added to flush the column. Isopropanol is used to flush the column.
    2. **Location**- LLE occurs in a jacketed conical bottom reactor or a separatory funnel. SPE occurs in the chromatography column. Both should be situated under a fume hood or in an explosion proof environment.

1. Potential Hazards and Risks
   1. See Heptane and Isopropanol SDS for detailed risks.

**Procedure**

1. Dissolve first pass distillate in Heptane (2:1, Heptane:Distillate)

2. Add solution to reactor

3. Prepare 60 parts **saline**

4. Separate saline into 3 equal volumes

5. Use citric acid to bring the pH of one volume of saline to pH 4

6. Use sodium bicarbonate to bring the pH of one volume of saline to pH 8

7. Add pH 4 saline to reactor

8. Mix for 10 minutes (**LLE)**

9. Drain saline

10. Repeat steps 7-9 with pH 8 saline

11. Repeat steps 7-9 with remaining neutral pH saline

12. Add CBleach per label instructions, to the solution in reactor, mix per label instructions

13. Wet load MagSil in chromatography column

14. Drain solution from reactor to top of column, collect all fractions together (**SPE**)

15. Before column runs dry, flush volume of clean Heptane through column

16. Before column runs dry, swap collection vessel and flush volume of clean Isopropanol

17. Rotovap Heptane solution (See Solvent Recovery SOP)

18. Second pass SPD (See Second Pass SPD SOP)

**Training**

1. All personnel shall read and fully adhere to this SOP when Remediating Pesticides, and should be trained hands on with this extraction procedure.

**“I have read and understand this SOP. I agree to fully adhere to its requirements”**

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