



EXTRACTOR SOLUTIONS COLOR REMEDICATION

Bleaching via adsorbent clays

FOR COLOR REMEDIATION OF
PIGMENTATION IN EXTRACTS. USED
DURING THE EXTRACTION PROCESS AS
AN INLINE FILTRATION SYSTEM.

DISCLAIMER

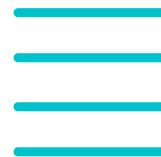
For use by professionals only. By purchasing or operating any equipment in accordance with this operating procedure you, as the operator and consumer are assuming all risk and liability associated with operating equipment in accordance with this SOP.

WARNING: Failure to follow safety precautions of all equipment can result in hazardous consequences such as: Physical damage to yourself, others, surrounding property, etc. Material data safety sheets should be available in the laboratory on all chemicals used in this process.

The following personal protection equipment should be worn by all lab personnel during extraction and preparation:

Personal Protection equipment

- Splash goggles
- Lab coat
- Breathing mask
- Gloves



Equipment & Tools

- Adsorbent clay Lustermax-T5-B80
 - Filter paper
 - Color remediation chamber
 - Closed loop extractor
 - Nitrogen cylinder and regulator
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WHAT IS COLOR REMEDIATION?

Extraction occurs in a closed loop extractor. Color remediation is performed in an inline filter. Oil bearing solvent is filtered through the color remediation chamber and transferred into the collection base for the recovery of the solvent.

Color remediation is the process of bleaching the pigmentation in our extracts. This happens when the oil bearing solvent is passed through a bed of adsorbent clays. These clays coat their surface area with impurities and pigmentation that would otherwise pass through to your end product.

COLOR REMEDIATION CHAMBER PREP

Preparing the CRC filter; If using a 1 micron sintered mesh filter, adsorbents can be placed directly on top of the sintered mesh filter. If using a 5 micron sintered mesh filter, it is recommended that you use a 1 micron filter paper directly on top of the sintered mesh filter. A small amount of Celite 545 should be used above the filter to prevent other particles from passing through.

Various combinations of filtration media can be used in a CRC. Most blends include the following: Celite 545 > T5 or T41 > Silica 60a. Filter media to biomass ratio can vary but is typically as follows. The weight of adsorbents being used is based directly upon the estimated oil yield. The ratios are typically as follows for aggressive remediation. - Silica 60a 1G/ 1.5G Oil - T5/B80 2G/1G Oil - Celite 545 (Varies). For Example; (1KG of biomass testing @ 10% should yield 100G of oil. This calls for ~66G of Silica 60A and 200G of T5/B80.) If less aggressive remediation is desired use ONLY T5/B80.

Lustermix media guide (Fresh material) 1:1 Lustermix : Yielded Oil (older Cured material) 2:1 Lustermix + 1:1.5 Silica:Yielded Oil.

Using Celite 545, create a small layer directly above the 1 micron sintered mesh filter. If using a 5 micron disc, place your 1 micron filter paper above the sintered disc then add Celite 545. Celite 545 is not weighed as it is only being used as a filtration agent to catch other adsorbents. Pack T5 or T41 above the Celite 545 layer. Gently pack the powder down so that it is even. Pack Silica 60a above the T5 or B80 layer.

COLOR REMEDIATION SOP

Closed loop operation with a CRC Solvent to biomass ratio 5:1 Solvent:Biomass Start closed loop operation following the standard operating procedure. For best results, dewaxing is recommended.

1. Vacuum out the system.
2. Saturate the material column and the color remediation column with solvent (Soak times and chamber temperature vary by personal preference.)
3. Open the valve leading to the collection base to allow solvent to flow into the collection base (For optimal results do not rush the flow of solvent. Leave the valve partially closed to slow the flow of solvent. Fast moving solvent can cause binding and clogging slowing down flow.)
4. Typically, Nitrogen assistance or a hot vapor loop from the solvent tank is used to push the remainder of the solvent into the collection base.
5. Once all of your solvent has entered the collection base you can begin recovery as per usual.