

## Recommended Coalescer Products & Equipment for Winter Oil Removal in Alkaline Degreasing

To effectively remove oil in winter and prevent floating oil in subsequent baths, you should use **both chemical and mechanical coalescers**. Below are the best options based on your requirements.

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### 1. Chemical Coalescers (Additives)

These are additives that help break oil emulsions and facilitate separation.

#### ✓ Option 1: Nonionic Surfactants (Low HLB)

- **Product Recommendation: Span 80 (Sorbitan Monooleate)**
  - **Why?**
    - Helps destabilize emulsions and make oil droplets merge for easier removal.
    - Works well in low temperatures.
    - Low foaming, so it won't interfere with degreasing.
  - **Dosage: 0.3 – 1.0% of bath volume**
  - **How to Use:**
    - Add slowly to the bath while stirring.
    - Works best when paired with an oil skimmer.
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#### ✓ Option 2: Silicone-Based Defoamer with Coalescing Action

- **Product Recommendation:**
    - **Dow Corning 1520 or TEGO Foamex 830** (Polydimethylsiloxane-based)
  - **Why?**
    - Helps in coalescing oil and also reduces foam formation.
    - Improves bath clarity and extends life.
  - **Dosage: 50–200 ppm**
  - **How to Use:**
    - Add in small amounts and observe oil separation over time.
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#### ✓ Option 3: Electrolyte-Based Coalescers (Oil Destabilizers)

- **Product Recommendation:**
  - **Calcium Chloride (CaCl<sub>2</sub>) or Magnesium Sulfate (MgSO<sub>4</sub>)**
- **Why?**
  - Neutralizes emulsified oil charges and helps coalesce small oil droplets.
- **Dosage: 0.05 – 0.5%**
- **How to Use:**

- Add in dissolved form and let it mix for 10–15 minutes.
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## 2. Mechanical Coalescers (Filtration & Separation Equipment)

These physically remove oil from the bath to prevent contamination of subsequent stages.

### ✓ Option 1: Belt Oil Skimmer (Best for Floating Oil)

- **Product Recommendation:**
    - **Abanaki Oil Skimmer (Model: Mighty Mini SST)**
    - **Oil Skimmers Inc. Model 6V**
  - **Why?**
    - Works well in degreasing tanks to remove floating oil.
    - Stainless steel construction is chemical-resistant.
    - Can handle cold temperature oils.
  - **How to Use:**
    - Install in degreasing tank, let it run continuously.
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### ✓ Option 2: Coalescing Media Filters (Best for Large Volume Systems)

- **Product Recommendation:**
    - **HydroFlo Technologies Coalescer System**
    - **Ultrasep Oil Water Separator (From Sepura Technologies)**
  - **Why?**
    - Uses a special filter to capture small oil droplets and merge them.
    - Works well with alkaline degreasers.
    - Can be installed in-line with bath circulation.
  - **How to Use:**
    - Place in bath recirculation loop before filtration.
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### ✓ Option 3: Centrifugal Oil Separator (Best for Heavy Oil Loads)

- **Product Recommendation:**
    - **Alfa Laval Disc Stack Separator**
    - **Russell Finex Self-Cleaning Separator**
  - **Why?**
    - Uses high-speed rotation to separate oil and sludge from the bath.
    - Best for high-oil content baths.
  - **How to Use:**
    - Connect to a recirculation pump for continuous oil removal.
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## Final Recommendation Based on Your Needs

- ✓ **For mild oil contamination & winter issues: Use Span 80 (0.5%) + Belt Oil Skimmer**
- ✓ **For moderate oil contamination: Use TEGO Foamex 830 (100 ppm) + HydroFlo Coalescer**
- ✓ **For heavy oil loads: Use Calcium Chloride (0.1%) + Centrifugal Oil Separator**

