Commonwealth Oil’s Mach™ 5 & Mach™ 12 Grinding Oils are active, staining, sulfurized grinding oils specifically formulated for use with Cubic Boron Nitride (CBN) grinding wheels. They contain a mixture of thermally stable, high-performance additives blended into oxidatively stable, highly refined base oils.

WHERE TO USE IT:

Mach™ 5 & Mach™ 12 Grinding Oils are the product of choice when machining titanium, Hastalloy, Inconel, Waspalloy, and other exotic alloys used in aerospace and nuclear applications. These products are non-chlorinated, and will not cause Rehbinder embrittlement common among chlorinated products.

How to use it:

Mach™ 5 & Mach™ 12 Grinding Oils are fully formulated, ready to use CBN grinding oils. Simply add to the sump and begin machining. We do not recommend adding these oils on top of existing oils in the system due to potential incompatibility issues. Call our customer service team for sump cleaning suggestions when changing oils.

PERFORMANCE BENEFITS:

Mach™ 5 & Mach™ 12 Grinding Oils employ the latest, thermally stable additive technology available today. They are oxidation resistant, even when exposed to the exceptionally high temperatures encountered in CBN grinding. These oils are non-chlorinated, and will not contribute to potential Rehbinder embrittlement and fatigue-cracking like many chlorinated products. Mach™ 5 & Mach™ 12 allow cooler running temperatures which greatly increase wheel life in CBN grinding applications.

Do not add any other product containing active sulfur or calcium sulfonates to these products. All previous products that may have contained active sulfur or calcium sulfonates must be completely removed from the machine before charging with fresh oil.
# TECHNICALLY SPEAKING:

<table>
<thead>
<tr>
<th>Test</th>
<th>Mach™ 5</th>
<th>Mach™ 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viscosity: cSt @ 40°C</td>
<td>7.5</td>
<td>12.5</td>
</tr>
<tr>
<td>Appearance</td>
<td>Clear yellow liquid</td>
<td>Clear yellow liquid</td>
</tr>
<tr>
<td>Copper Corrosion</td>
<td>4C</td>
<td>4C</td>
</tr>
<tr>
<td>Flash Point, COC °C</td>
<td>&gt; 130</td>
<td>&gt; 130</td>
</tr>
<tr>
<td>Flash Point, COC °F</td>
<td>&gt; 266</td>
<td>&gt; 266</td>
</tr>
<tr>
<td>Active Sulfur %</td>
<td>1.2%</td>
<td>1.2%</td>
</tr>
<tr>
<td>Total Sulfur %</td>
<td>1.65%</td>
<td>1.65%</td>
</tr>
<tr>
<td>Chlorine %</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Phosphorous</td>
<td>Present</td>
<td>Present</td>
</tr>
<tr>
<td>Density, lbs./US Gallon</td>
<td>7.01</td>
<td>7.09</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.84</td>
<td>0.85</td>
</tr>
</tbody>
</table>

These are typical figures and do not constitute a specification.

## Handling & Safety Information

For information on the safe handling and use of this product, refer to the Material Safety Data Sheet obtainable from Commonwealth Oil Corporation.

Available in Pails, Drums and One-Way Bulk Containers
Mach™ 5 & Mach™ 12 Grinding Oils

SECTION 1: Product Information and Company Identification

Common Name: Mach™ 5 & Mach™ 12 Grinding Oils
Product Code: 7800, 7826
Material Use: Grinding Oil
Supplier/Manufacturer: Commonwealth Oil, 2080 Ferriss Rd N., Harrow, ON, N0R 1G0
In Case of Emergency: CANUTEC (613) 996-6666 COLLECT 24 Hr

SECTION 2: Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Registry No.</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>Concentration %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No Hazardous Ingredients</td>
</tr>
</tbody>
</table>

See Section 8 for Exposure Limits.
See Section 11 for Toxicological Data.

SECTION 3: Hazards Identification

Chemical Family: Petroleum Hydrocarbon
Physical State: Liquid
Emergency Overview: No specific Hazard
Use with care.
Follow good Industrial Hygiene practices.

Routes of Entry: Dermal contact, eye contact, inhalation and ingestion.
Potential Acute Health Effects: No known significant effects or critical hazards.
Potential Chronic Health Effects: Not applicable for carcinogenic, mutagenic, or teratogenic effects.
Medical Conditions Aggravated by Overexposure: Repeated or prolonged exposure is not known to aggravate medical condition.
Overexposure Signs and Symptoms: Not available

See Toxicological Information (section 11)

SECTION 4: First Aid Measures

Eye Contact: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 20 minutes. Cold water may be used. Get medical attention if irritation occurs and or persists.

Skin Contact: Remove any contaminated clothing. Wash with soap and water. Get medical attention if irritation occurs and or persists.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious patient. If large amounts of this material are swallowed, call a physician immediately.

Notes to Physician: Not available
**SECTION 5: Fire Fighting Measures**

**Flammability of the Product**: Low hazard. May be combustible or burn at high temperatures above flash point.

**Auto Ignition Temperature**: Not Established

**Flash Point (COC)**: > 130°C (> 266°F)

**Flammable Limits**: Not Established

**Hazardous Combustion Products**: These products are smoke, carbon monoxide, carbon dioxide and traces of oxides

**Fire Hazards in Presence of various Substances**: Flammable in presence of open flames, sparks and static discharge. Slightly flammable to flammable in the presence of temperatures at or above Flash point.

**Explosion Hazard in Presence of various substances**

**Fire Fighting Media and Instructions**: SMALL FIRE: Use dry chemical powder

LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

**Protective Clothing (Fire)**

Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear. Be sure to use a MSHA/NIOSH approved respirator or equivalent.

**Special Remarks on Fire Hazards**: Do not use forced stream as this could cause fire to spread. Self-contained breathing apparatus should be worn by fire fighters.

---

**SECTION 6: Accidental Release Measures**

**Small Spill and Leak**: Absorb with an inert material and put spilled material in an appropriate waste disposal.

**Large Spill and Leak**: Absorb with an inert material and put spilled material in an appropriate waste disposal.

Do not allow any potentially contaminated water including rainwater, runoff from fire fighting or spills enter any waterway, sewer or drain.

**Note**: See section 8 for personal protective equipment and section 13 for waste disposal.

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**SECTION 7: Handling and Storage**

**Handling**: Use proper grounding procedures as material can accumulate static charges. Avoid breathing vapors or spray mists. Avoid contact with eyes, skin and clothing. After handling, always wash hands thoroughly with soap and water. Do not cut, weld, heat or pressurize containers. Use with adequate ventilation.

**Storage**: Keep container tightly closed. Store in a dry, cool and well-ventilated area. Do not cut, weld, heat or pressurize empty containers. Do not store near open flames or sources of ignition.

---

**SECTION 8: Exposure Controls, Personal Protection**

**Engineering Controls**: Good general ventilation should be sufficient to control airborne levels. Local exhaust is recommended to control emissions at the source. Mechanical ventilation is recommended for confined areas. Ensure eyewash stations and safety showers are proximal to the work station location.

**Personal Protection**

- **Eyes**: Safety glasses or goggles are advisable.
- **Body**: Lab coat or suitable protective clothing is advisable.
- **Respiratory**: A respirator is not needed under normal and intended usage conditions.
- **Hands**: Chemical resistant or oil impervious gloves are advisable.
- **Feet**: Shoes (as required by the work place).

**Personal Protection in Case of a Large Spill**: Splash goggles. Full suit. Vapor respirator. Boots. Chemical resistant gloves. A self contained breathing apparatus should be used to avoid inhalation of the product.

**Exposure Limits**

- ACGIH TLV (United States and Canada)
- Oil Mist – Severely refined TLV-TWA: 5 mg/m³ Form: Mist

**Consult local authorities for your acceptable exposure limits.**
SECTION 9: Physical and Chemical Properties

Physical State: Liquid
Appearance and Color: Clear yellow solution.
Odour: Petroleum odour.
pH: Not Applicable
Flash Point (COC): > 130°C (> 266°F)
Boiling/Condensation Point: Not Available
Pour Point °C (°F): Not Available
Freezing Point: Not Available
Specific Gravity: 0.84 - 0.85 (Water = 1)
Density, lbs./Gallon: 7.01 – 7.09
Vapor Pressure: < 0.5mm Hg @ 20°C (68°F)
Vapor Density: Not Available
% Volatility, By volume: Not Available
Evaporation Rate: Negligible
VOC: Not Applicable
Viscosity cSt @ 40°C: 7.5 and 12.5
Solubility in Water: Not Soluble

SECTION 10: Stability and Reactivity

Stability and Reactivity: The product is stable.
Incompatibility with Various Substances: Reactive with strong oxidizing agents.
Hazardous Decomposition: Fumes, smoke, and carbon monoxide and sulphur oxides in case of incomplete combustion.
Hazardous Polymerization: Will not occur

SECTION 11: Toxicological Information

Acute Toxicity Data: Avoid breathing mist and fumes. Proper ventilation should be utilized.
Chronic Effects on Humans:
- Eyes: Slightly irritating, but will not injure eye tissue. May irritate the eyes.
- Skin: Low toxicity. Frequent or prolonged contact may irritate the skin.
- Ingestion: Low toxicity.
- Inhalation: Negligible hazard at normal temperatures. Elevated temperatures or mechanical action may form vapors, mists or fumes, which may be irritating to the eyes, nose, throat and lungs. Avoid breathing vapors or mists.

Other Toxic Effects on Humans: Low
Special Remarks on Toxicity to Animals: Low
Special Remarks on Other Toxic Effects on Humans: None reported.

SECTION 12: Ecological Information

BOD and COD: Not Established
Biodegradability/OECD: Not Established
Mobility: Not Established
Products of Degradation: Not Established
Toxicity of the Products of Biodegradation: Not Established

Special Remarks on the Products of Biodegradation: Not Established
**SECTION 13: Disposal Considerations**

*Waste Information:* Waste should be disposed of in accordance to local, federal and state environmental control regulations.

*Consult your local or regional authorities.*

**SECTION 14: Transport Information**

<table>
<thead>
<tr>
<th>Regulatory Information</th>
<th>UN Number</th>
<th>Proper Shipping Name</th>
<th>Class</th>
<th>Packing Group</th>
<th>Label</th>
<th>Additional Information</th>
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</thead>
<tbody>
<tr>
<td>United States (DOT)</td>
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<tr>
<td>Canada (TDG)</td>
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<tr>
<td>IMDG Code</td>
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<tr>
<td>IATADGR Class</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>


**SECTION 15: Regulatory Information**

*United States*

**U.S. Federal Regulations:**
- TSCA 8(b) inventory: All components listed.
- SARA 302/304/311/312 extremely hazardous substances: No products found.
- SARA 302/304 emergency planning and notification: No products found.
- SARA 302/304 hazardous chemicals: No products found.
- SARA 311/312 MSDS distribution – chemical inventory – hazard identification: No products found.
- Clean Water Act (CWA) 307: No products found.
- Clean Water Act (CWA) 311: No products found.
- Clean Air Act (CAA) 112 accidental release prevention: No products found.
- Clean Air Act (CAA) 112 regulated flammable substances: No products found.
- Clean Air Act (CAA) 112 regulated toxic substances: No products found.

**State Regulations:** California prop. 65: No products found.

*Canada*

**WHMIS (Canada):** Not controlled under WHMIS (Canada)
CEPA DSL: All components listed.

"This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by the Controlled Products Regulations."

**Mexico Classification:**
- Flammability: 1
- Health: 1
- Reactivity: 0
- Special:
SECTION 16: Other Information

Label Requirements: USE WITH CARE.
USE AS DIRECTED.

Hazardous Material
Information System (U.S.A.):

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
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<tbody>
<tr>
<td>Health</td>
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</tr>
<tr>
<td>Fire Hazard</td>
<td>1</td>
</tr>
<tr>
<td>Reactivity</td>
<td>0</td>
</tr>
<tr>
<td>Personal Protection</td>
<td>B</td>
</tr>
</tbody>
</table>

National Fire Protection Association (U.S.A.):

- Flammability: 1
- Instability: 0
- Health: 1

Date of Issue: August 30, 2012

Date of Previous Issue: August 19, 2009

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy of completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.