1. Product and company identification

Product name: Moly Dee CF Tapping Fluid
MSDS #: 467723
Historic MSDS #: 05226-BE
Code: 467723-US03
Product use: Metalworking fluid - neat. For specific application advice see appropriate Technical Data Sheet or consult our company representative.
Manufacturer: Castrol Industrial North America, Inc.
150 W. Warrenville Road
Naperville, IL 60563
Supplier: Castrol Industrial North America, Inc.
150 W. Warrenville Road
Naperville, IL 60563
Product Information: +1-877-641-1600
EMERGENCY SPILL INFORMATION: 1 (800) 424-9300 CHEMTREC (USA)

2. Hazards identification

Physical state: Liquid.
Color: Gray.
Emergency overview: CAUTION!
MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION.
POSSIBLE REPRODUCTIVE HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE ADVERSE REPRODUCTIVE EFFECTS BASED ON ANIMAL DATA.

Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis. Do not breathe vapor or mist. Do not get on skin or clothing. Avoid contact with eyes. Contains material which may impair fertility, based on animal data. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Routes of entry: Dermal contact. Eye contact. Inhalation.

Potential health effects

| Eyes | May cause eye irritation. |
| Skin | May cause skin irritation. Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis. |
| Inhalation | May cause respiratory tract irritation. |
| Ingestion | Ingestion may cause gastrointestinal irritation and diarrhea. |

See toxicological information (Section 11)

3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>CAS #</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base oil - highly refined</td>
<td>Varies</td>
<td>40 - 45</td>
</tr>
<tr>
<td>trixylyl phosphate</td>
<td>25155-23-1</td>
<td>1 - 5</td>
</tr>
</tbody>
</table>

Product name: Moly Dee CF Tapping Fluid
Product code: 467723-US03
Version: 2.02
Date of issue: 08/27/2012
Format: US
Language: ENGLISH
4. First aid measures

**Eye contact**
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.

**Skin contact**
Immediately wash exposed skin with soap and water. Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.

**Inhalation**
If inhaled, remove to fresh air. Get medical attention if symptoms occur.

**Ingestion**
Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

5. Fire-fighting measures

**Flash point**
Open cup: 200°C (392°F) [Cleveland.]

**Fire/explosion hazards**
In a fire or if heated, a pressure increase will occur and the container may burst.

**Extinguishing media**

<table>
<thead>
<tr>
<th>Suitable</th>
<th>Use an extinguishing agent suitable for the surrounding fire.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not suitable</td>
<td>Do not use water jet.</td>
</tr>
</tbody>
</table>

**Fire-fighting procedures**
Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

**Hazardous combustion products**
Combustion products may include the following:
- phosphorus oxides
- carbon oxides (CO, CO₂) (carbon monoxide, carbon dioxide)
- sulfur oxides (SO, SO₂ etc.)

**Protective clothing (fire)**
Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

**Personal precautions**
No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. In accordance with good industrial hygiene and safety work practices, airborne exposures should be controlled to the lowest extent practicable. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

**Environmental precautions**
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

**Methods for cleaning up**

**Large spill**
Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

**Small spill**
Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if watersoluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
7. Handling and storage

**Handling**

Put on appropriate personal protective equipment (see Section 8). Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate.

**Storage**

Store in accordance with local regulations. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

**Other information**

Sulfur compounds in this material may decompose when heated to release hydrogen sulfide gas which may accumulate to potentially lethal concentrations in enclosed air spaces. Vapor concentrations of hydrogen sulfide above 50 ppm, or prolonged exposure at lower concentrations, may saturate human odor perceptions so that the smell of gas may not be apparent. Exposure to concentrations of hydrogen sulfide vapor above 500 ppm may cause rapid death. Do not rely on the sense of smell to detect hydrogen sulfide.

8. Exposure controls/personal protection

**Occupational exposure limits**

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Occupational exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base oil - highly refined</td>
<td>ACGIH (United States). TWA: 5 mg/m³ 8 hours. Form: Mineral oil, mist</td>
</tr>
<tr>
<td></td>
<td>OSHA (United States). TWA: 5 mg/m³ 8 hours. Form: Mineral oil, mist</td>
</tr>
</tbody>
</table>

While specific OELs for certain components may be shown in this section, other components may be present in any mist, vapor or dust produced. Therefore, the specific OELs may not be applicable to the product as a whole and are provided for guidance only.

**Some states may enforce more stringent exposure limits.**

**Control Measures**

Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

**Hygiene measures**

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing.

**Personal protection**

**Eyes**

Avoid contact with eyes. Safety glasses with side shields or chemical goggles.

**Skin and body**

Do not get on skin or clothing. Wear clothing and footwear that cannot be penetrated by chemicals or oil. Wear face shield.

**Respiratory**

Use adequate ventilation. Do not breathe vapor or mist.

**Hands**

The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

9. Physical and chemical properties

**Physical state**

Liquid.

**Color**

Gray.

**Odor**

Odorless.

**Flash point**

Open cup: 200°C (392°F) [Cleveland.]

**Density**

950 kg/m³ (0.95 g/cm³) at 15.6°C

**Viscosity**

Kinematic: 165 mm²/s (165 cSt) at 40°C
10. Stability and reactivity

Stability and reactivity
The product is stable.

Possibility of hazardous reactions
Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid
Avoid all possible sources of ignition (spark or flame).

Incompatibility with various substances
Reactive or incompatible with the following materials: oxidizing materials.

Hazardous decomposition products
Hydrogen Sulfide (H2S)

Hazardous polymerization
Under normal conditions of storage and use, hazardous polymerization will not occur.

11. Toxicological information

Other Toxicity Data
Although biological testing has found evidence of delayed neurotoxic effects with various grades of trixylyl phosphate, no neurotoxic effects have been observed with this product. However, product should still be regarded as having a potential to cause damage to the nervous system by inhalation, skin contact or ingestion. Good working practices and personal hygiene must be maintained at all times to ensure contact with the product is avoided.

trixylyl phosphate: Possible reproductive hazard based on studies with laboratory animals.

Over exposure to vapors may result in headaches, dizziness, nausea.

Potential chronic health effects

Carcinogenicity
No known significant effects or critical hazards.

Fertility effects
Contains material which may impair male fertility, based on animal data.

12. Ecological information

Ecotoxicity
No testing has been performed by the manufacturer.

13. Disposal considerations

Waste information
The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

NOTE: The generator of waste has the responsibility for proper waste identification (based on characteristic(s) or listing), transportation and disposal.
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>Additional information</th>
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<tr>
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<tr>
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<td>III</td>
<td>Remarks: Environmentally hazardous substance mark.</td>
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</tbody>
</table>

15. Regulatory information

U.S. Federal Regulations

United States inventory (TSCA 8b) All components are listed or exempted.

TSCA 12(b) one-time export: 1-decene, sulfurized

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: No products were found.
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Moly Dee CF Tapping Fluid: Immediate (acute) health hazard, Delayed (chronic) health hazard

SARA 313
Form R - Reporting requirements This product does not contain any hazardous ingredients at or above regulated thresholds.
Supplier notification This product does not contain any hazardous ingredients at or above regulated thresholds.
CERCLA Sections 102a/103 Hazardous Substances (40 CFR Part 302.4): CERCLA: Hazardous substances.: lead: 10 lbs. (4.54 kg); xylenol: 1000 lbs. (454 kg);

State regulations

Massachusetts Substances None of the components are listed.
New Jersey Hazardous Substances The following components are listed: MINERAL OIL (UNTREATED and MILDLY TREATED);
MINERAL OIL (UNTREATED and MILDLY TREATED)
Pennsylvania RTK Hazardous Substances The following components are listed: OILS, LARD
California Prop. 65 WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm. lead

Other regulations

Canada inventory All components are listed or exempted.
REACH Status For the REACH status of this product please consult your company contact, as identified in Section 1.
Australia inventory (AICS) At least one component is not listed.
China inventory (IECSC) All components are listed or exempted.
16. Other information

Label requirements

CAUTION!

MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION.
POSSIBLE REPRODUCTIVE HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE
ADVERSE REPRODUCTIVE EFFECTS BASED ON ANIMAL DATA.

HMIS® Rating:

<table>
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<th>Health</th>
<th>Flammability</th>
<th>Physical</th>
<th>Hazard</th>
<th>Personal protection</th>
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<tr>
<td>1</td>
<td>1</td>
<td>0</td>
<td></td>
<td>B</td>
</tr>
</tbody>
</table>

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

History

Date of issue: 08/27/2012.
Date of previous issue: 08/27/2012.
Prepared by: Product Stewardship

Notice to reader

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from BP Group.

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