SAFETY DATA SHEET  
according to the (US) Hazard Communication Standard (29 CFR 1910.1200) 

Date of issue: 04/07/2015  
Version 1.0  

SECTION 1. Identification  
Product identifier  

Product number  
841778  

Product name  
Butyrophenone for synthesis  

CAS-No.  
495-40-9  

Relevant identified uses of the substance or mixture and uses advised against  
Identified uses  
Chemical for synthesis  

Details of the supplier of the safety data sheet  
Company  
EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821, United States of America | General Inquiries: +1-978-715-4321 | Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)  

Emergency telephone  
800-424-9300 CHEMTREC (USA)  
+1-703-527-3887 CHEMTREC (International)  
24 Hours/day; 7 Days/week  

SECTION 2. Hazards identification  
GHS Classification  
Flammable liquid, Category 4, H227  
For the full text of the H-Statements mentioned in this Section, see Section 16.  

GHS-Labeling  

Signal Word  
Warning  

Hazard Statements  
H227 Combustible liquid.  

Precautionary Statements  
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.  
P403 + P235 Store in a well-ventilated place. Keep cool.  
P501 Dispose of contents/ container to an approved waste disposal plant.  

Other hazards
None known.

SECTION 3. Composition/information on ingredients

Formula \( \text{C}_{10}\text{H}_{12}\text{O} \) (Hill)

Molar mass 148.2 g/mol

Hazardous ingredients

*Chemical Name (Concentration)*

CAS-No.

butyrophenone (>= 90 % - <= 100 %)

495-40-9

Exact percentages are being withheld as a trade secret.

SECTION 4. First aid measures

**Description of first-aid measures**

**Inhalation**

After inhalation: fresh air.

**Skin contact**

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower.

**Eye contact**

After eye contact: rinse out with plenty of water.

**Ingestion**

After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

Never give anything by mouth to an unconscious person.

**Most important symptoms and effects, both acute and delayed**

We have no description of any toxic symptoms.

**Indication of any immediate medical attention and special treatment needed**

No information available.

SECTION 5. Fire-fighting measures

**Extinguishing media**

*Suitable extinguishing media*

Foam, Carbon dioxide (CO2), Dry powder

*Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

**Special hazards arising from the substance or mixture**

Combustible.

Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapors possible in the event of fire.
Advice for firefighters

Special protective equipment for fire-fighters
In the event of fire, wear self-contained breathing apparatus.

Further information
Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Do not breathe vapors, aerosols. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:
Protective equipment see section 8.

Environmental precautions
Do not let product enter drains.

Methods and materials for containment and cleaning up
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

SECTION 7. Handling and storage

Precautions for safe handling
Observe label precautions.

Advice on protection against fire and explosion
Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Conditions for safe storage, including any incompatibilities
Tightly closed.
Store at +15°C to +25°C (+59°F to +77°F).

SECTION 8. Exposure controls/personal protection

Exposure limit(s)
Contains no substances with occupational exposure limit values.

Engineering measures
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures
Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures
Change contaminated clothing. Wash hands after working with substance.
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Eye/face protection
Safety glasses

Hand protection
Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Other protective equipment:
Flame retardant antistatic protective clothing.

Respiratory protection
Not required; except in case of aerosol formation.
Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

SECTION 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Physical state</th>
<th>liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>No strong odor known.</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No information available.</td>
</tr>
<tr>
<td>pH</td>
<td>No information available.</td>
</tr>
<tr>
<td>Melting point</td>
<td>11 - 13 °C</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>428 - 432 °F (220 - 222 °C) at 1,013 hPa</td>
</tr>
<tr>
<td>Flash point</td>
<td>190 °F (88 °C)</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No information available.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No information available.</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>No information available.</td>
</tr>
<tr>
<td>Upper explosion limit</td>
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</tr>
<tr>
<td>Vapor pressure</td>
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</tr>
<tr>
<td>Relative vapor density</td>
<td>No information available.</td>
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<tr>
<td>Density</td>
<td>0.988 g/cm³</td>
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<tr>
<td>Relative density</td>
<td>No information available.</td>
</tr>
<tr>
<td>Water solubility</td>
<td>No information available.</td>
</tr>
</tbody>
</table>
SECTION 10. Stability and reactivity

Reactivity
Forms explosive mixtures with air on intense heating.
A range from approx. 15 Kelvin below the flash point is to be rated as critical.

Chemical stability
The product is chemically stable under standard ambient conditions (room temperature).

Possibility of hazardous reactions
Violent reactions possible with:
Strong oxidizing agents

Conditions to avoid
Strong heating.

Incompatible materials
no information available

Hazardous decomposition products
no information available

SECTION 11. Toxicological information

Information on toxicological effects
Likely route of exposure
Eye contact, Skin contact

Specific target organ systemic toxicity - single exposure
The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ systemic toxicity - repeated exposure
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard
Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity
IARC
No ingredient of this product present at levels greater than or
equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA  No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP  No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

ACGIH  No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Further information
Hazardous properties cannot be excluded but are unlikely when the product is handled appropriately.
Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity
No information available.

Persistence and degradability
No information available.

Bioaccumulative potential
Partition coefficient: n-octanol/water
\[ \log Pow = 2.77 \]
(experimental)
(Lit.) Bioaccumulation is not expected.

Mobility in soil
No information available.

SECTION 13. Disposal considerations
The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information

Land transport (DOT)
Not classified as dangerous in the meaning of transport regulations.

Air transport (IATA)
Not classified as dangerous in the meaning of transport regulations.

Sea transport (IMDG)
Not classified as dangerous in the meaning of transport regulations.

SECTION 15. Regulatory information
United States of America

SARA 313
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 302
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Clean Water Act
This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.
This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

DEA List I
Not listed

DEA List II
Not listed

US State Regulations

Massachusetts Right To Know
Remarks
No components are subject to the Massachusetts Right to Know Act.

California Prop 65 Components
This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Notification status
TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL.

SECTION 16. Other information

Training advice
Provide adequate information, instruction and training for operators.
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Labeling

Signal Word
Warning

Hazard Statements
H227 Combustible liquid.

Full text of H-Statements referred to under sections 2 and 3.
H227 Combustible liquid.

Key or legend to abbreviations and acronyms used in the safety data sheet
Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Date of issue: 04/07/2015

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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