# Methyl Isobutyl Carbinol

**Safety Data Sheet**

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 04/06/2018  
Revision date: 04/06/2018  
Supersedes: 06/01/2015

## SECTION 1: Identification

### 1.1. Identification

| Product form | Substance |
| Trade name | Methyl Isobutyl Carbinol |
| Chemical name | Methyl Isobutyl Carbinol |
| CAS-No. | 108-11-2 |
| Product code | HP-040788-FP |
| Formula | C₆H₁₄O |
| Synonyms | Isobutylmethylmethanol / 2-Methyl-4-pentanol / Pentan-2-ol, 4-methyl- / 4-Pentanol, 2-methyl- / Methyl-2-pentanol, 4- / 4-Methyl-2-pentanol / 4-Methylpentan-2-ol / 1,3-Dimethyl-1-butanol / MIBC / Methylisobutylcarbinol / 4-Methyl-2-amyl alcohol / Methyl isobutyl carbinol / Methyl(2-methylpropyl) carbinol / 4-Methylpent-2-one |

### 1.2. Recommended use and restrictions on use

**Use of the substance/mixture**  
Solvent, organic synthesis, brake fluids

**Use of the substance/mixture**  
Solvent

### 1.3. Supplier

Monument Chemical  
16717 Jacintoport Blvd.  
Houston, TX 77015 - USA  
T (281) 452-5951 - F (281) 457-1127  
sds@monumentchemical.com - www.monumentchemical.com

### 1.4. Emergency telephone number

**Emergency number**  
24 HR CHEMTREC: 1-800-424-9300; 24 HR Emergency Assistance: 1-832-376-2026

## SECTION 2: Hazard(s) identification

### 2.1. Classification of the substance or mixture

<table>
<thead>
<tr>
<th>GHS-US classification</th>
<th>Flammable liquids Category 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard (GHS-US)</td>
<td>H226 - Flammable liquid and vapour</td>
</tr>
</tbody>
</table>
| Specific target organ toxicity (single exposure) Category 3 | H319 - Causes serious eye irritation  
| May cause respiratory irritation |

Full text of H statements : see section 16

### 2.2. GHS Label elements, including precautionary statements

| Hazard pictograms (GHS-US) | |
|-----------------------------| |
| Signal word (GHS-US) | Warning |
| Hazard statements (GHS-US) | H226 - Flammable liquid and vapour  
H319 - Causes serious eye irritation  
H335 - May cause respiratory irritation |
| Precautionary statements (GHS-US) | P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking.  
P233 - Keep container tightly closed.  
P240 - Ground/Bond container and receiving equipment  
P241 - Use explosion-proof electrical, lighting, ventilating equipment  
P242 - Use only non-sparking tools.  
P243 - Take precautionary measures against static discharge.  
P261 - Avoid breathing dust, fume, gas, mist, spray, vapors.  
P264 - Wash hands, forearms and face thoroughly after handling.  
P271 - Use only outdoors or in a well-ventilated area.  
P280 - Wear eye protection, protective clothing, protective gloves. |
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a doctor, a POISON CENTER if you feel unwell
P337+P313 - If eye irritation persists: Get medical advice/attention.
P370+P378 - In case of fire: Use alcohol resistant foam, carbon dioxide (CO2), dry extinguishing powder, Water spray to extinguish.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P403+P235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. Other hazards which do not result in classification
No additional information available

2.4. Unknown acute toxicity (GHS US)
Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances
Substance type: Mono-constituent

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Isobutyl Carbinol (Main constituent)</td>
<td>(CAS-No.) 108-11-2</td>
<td>&gt;= 99</td>
</tr>
</tbody>
</table>

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures
Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures
First-aid measures general: Call a poison center/doctor/physician if you feel unwell.
First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor/physician if you feel unwell.
First-aid measures after skin contact: Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing.
First-aid measures after eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion: Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)
Symptoms/effects after inhalation: May cause respiratory irritation.
Symptoms/effects after skin contact: Slight irritation. Red skin. Dry skin. Itching.
Symptoms/effects after eye contact: Irritation of the eye tissue. Eye irritation.

Chronic symptoms: No effects known.

4.3. Immediate medical attention and special treatment, if necessary
Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

5.2. Specific hazards arising from the chemical
Fire hazard: Flammable liquid and vapour.
Reactivity: Reacts with (some) acids: (increased) risk of fire/explosion. Reacts violently with (strong) oxidizers: (increased) risk of fire/explosion. Flammable liquid and vapour.

5.3. Special protective equipment and precautions for fire-fighters
Protection during firefighting: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment

Emergency procedures
- Ventilate spillage area. No open flames, no sparks, and no smoking. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment
- Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment
- Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Dam up the liquid spill. Provide equipment/receptacles with earthing. Do not use compressed air for pumping over spills. Heating: dilute combustible gas/vapour with water curtain.

Methods for cleaning up
- Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.

Other information
- Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling
- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapors may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment. Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes.

Hygiene measures
- Observe normal hygiene standards. Keep container tightly closed. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures
- Ground/bond container and receiving equipment.

Storage conditions
- Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.

Heat-ignition
- KEEP SUBSTANCE AWAY FROM: heat sources. ignition sources.

Information on mixed storage
- KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) acids. (strong) bases. amines.

Storage area
- Ventilation at floor level. Fireproof storeroom. Provide for a tub to collect spills. Provide the tank with earthing. Store at ambient temperature. Meet the legal requirements.

Special rules on packaging
- SPECIAL REQUIREMENTS: closing. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

Packaging materials

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Methyl Isobutyl Carbinol (108-11-2)</th>
<th>ACGIH</th>
<th>Local name</th>
<th>Methyl isobutyl carbinol</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>Local name</td>
<td>Methyl isobutyl carbinol</td>
<td></td>
</tr>
<tr>
<td>ACGIH</td>
<td>ACGIH TWA (ppm)</td>
<td>25 ppm [SKIN]</td>
<td></td>
</tr>
<tr>
<td>ACGIH</td>
<td>ACGIH STEL (ppm)</td>
<td>40 ppm</td>
<td></td>
</tr>
<tr>
<td>ACGIH</td>
<td>Remark (ACGIH)</td>
<td>URT &amp; eye irr; CNS impair</td>
<td></td>
</tr>
<tr>
<td>ACGIH</td>
<td>Regulatory reference</td>
<td>ACGIH 2018</td>
<td></td>
</tr>
<tr>
<td>OSHA</td>
<td>OSHA PEL (TWA) (mg/m³)</td>
<td>100 mg/m³</td>
<td></td>
</tr>
<tr>
<td>OSHA</td>
<td>OSHA PEL (TWA) (ppm)</td>
<td>25 ppm [SKIN]</td>
<td></td>
</tr>
<tr>
<td>OSHA</td>
<td>Limit value category (OSHA)</td>
<td>prevent or reduce skin absorption</td>
<td></td>
</tr>
</tbody>
</table>
### Methyl Isobutyl Carbinol

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<table>
<thead>
<tr>
<th>Methyl Isobutyl Carbinol (108-11-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSHA</td>
</tr>
<tr>
<td>IDLH</td>
</tr>
<tr>
<td>NIOSH</td>
</tr>
<tr>
<td>NIOSH</td>
</tr>
<tr>
<td>NIOSH</td>
</tr>
<tr>
<td>NIOSH</td>
</tr>
<tr>
<td>NIOSH</td>
</tr>
</tbody>
</table>

#### 8.2. Appropriate engineering controls

Appropriate engineering controls: Ensure good ventilation of the work station.

Environmental exposure controls: Avoid release to the environment.

#### 8.3. Individual protection measures/Personal protective equipment

**Materials for protective clothing:**

GIVE EXCELLENT RESISTANCE: butyl rubber. GIVE GOOD RESISTANCE: butyl rubber. PVC. neoprene

**Hand protection:**

Protective gloves

**Eye protection:**

Safety glasses

**Skin and body protection:**

Protective clothing

**Respiratory protection:**

In case of insufficient ventilation, wear suitable respiratory equipment

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Clear, colorless liquid.</td>
</tr>
<tr>
<td>Color</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>mild</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>-90 °C</td>
</tr>
<tr>
<td>Freezing point</td>
<td>-90 °C ; -130.0 °F</td>
</tr>
<tr>
<td>Boiling point</td>
<td>132 °C ; 269.6 °F</td>
</tr>
<tr>
<td>Critical temperature</td>
<td>291 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>41 °C ; 105.8 °F closed cup</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
<td>0.3</td>
</tr>
<tr>
<td>Relative evaporation rate (ether=1)</td>
<td>33</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>2.8 mm Hg (at 25 °C)</td>
</tr>
<tr>
<td>Vapor pressure at 50 °C</td>
<td>34 hPa</td>
</tr>
<tr>
<td>Relative vapor density at 20 °C</td>
<td>3.5</td>
</tr>
<tr>
<td>Relative density</td>
<td>0.82</td>
</tr>
<tr>
<td>Relative density of saturated gas/air mixture</td>
<td>1</td>
</tr>
<tr>
<td>Specific gravity / density</td>
<td>807.5 kg/m³ (at 20 °C)</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>102.2 g/mol</td>
</tr>
</tbody>
</table>
**Methyl Isobutyl Carbinol**

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### Solubility
- Moderately soluble in water. Soluble in ethanol. Soluble in ether.
- Water: 2 g/100ml (at 25 °C)

### Log Pow
- 1.43 (at 25 °C)

### Auto-ignition temperature
- 305 °C : 581 °F

### Decomposition temperature
- No data available

### Viscosity, kinematic
- 5.08 mm²/s (25 °C)

### Viscosity, dynamic
- 4.116 mPa.s (25 °C)

### Explosion limits
- 1 - 5.5 vol %
- 42 - 235 g/m³
- LEL: 1 vol %
- UEL: 5.5 vol %

### Explosive properties
- No data available

### Oxidizing properties
- No data available

### 9.2. Other information
- Specific conductivity: 70000 pS/m
- Saturation concentration: 25 g/m³
- VOC content: 100%
- Other properties: Gas/vapour heavier than air at 20°C. Clear. Slightly volatile. Substance has neutral reaction. May generate electrostatic charges.

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**SECTION 10: Stability and reactivity**

**10.1. Reactivity**
- Reacts with (some) acids: (increased) risk of fire/explosion. Reacts violently with (strong) oxidizers: (increased) risk of fire/explosion. Flammable liquid and vapour.

**10.2. Chemical stability**
- Stable under normal conditions.

**10.3. Possibility of hazardous reactions**
- No dangerous reactions known under normal conditions of use.

**10.4. Conditions to avoid**

**10.5. Incompatible materials**
- No additional information available

**10.6. Hazardous decomposition products**
- Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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**SECTION 11: Toxicological information**

**11.1. Information on toxicological effects**

### Acute toxicity
- Not classified

#### Methyl Isobutyl Carbinol (108-11-2)

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>2600 mg/kg</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>2880 mg/kg</td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l)</td>
<td>&gt; 16000 mg/m³ (Equivalent or similar to OECD 403, 4 h, Rat, Male/female, Experimental value)</td>
</tr>
<tr>
<td>LC50 inhalation rat (ppm)</td>
<td>&gt; 4600 ppm (Exposure time: 2 h)</td>
</tr>
<tr>
<td>ATE US (oral)</td>
<td>2600 mg/kg body weight</td>
</tr>
<tr>
<td>ATE US (dermal)</td>
<td>2880 mg/kg body weight</td>
</tr>
</tbody>
</table>

### Skin corrosion/irritation
- Not classified

### Serious eye damage/irritation
- Causes serious eye irritation.

### Respiratory or skin sensitization
- Not classified

### Germ cell mutagenicity
- Not classified

### Carcinogenicity
- Not classified

### Reproductive toxicity
- Not classified

### Specific target organ toxicity – single exposure
- May cause respiratory irritation.
Specific target organ toxicity – repeated exposure: Not classified

Aspiration hazard: Not classified

Symptoms/effects after inhalation: May cause respiratory irritation.
Symptoms/effects after skin contact: Slight irritation. Red skin. Dry skin. Itching.
Symptoms/effects after eye contact: Irritation of the eye tissue. Eye irritation.

Chronic symptoms: No effects known.

### SECTION 12: Ecological information

#### 12.1. Toxicity

Ecology - general: Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.


<table>
<thead>
<tr>
<th>Methyl Isobutyl Carbinol (108-11-2)</th>
<th>LC50 fish 1</th>
<th>360 mg/l 24hr; Goldfish</th>
</tr>
</thead>
</table>

#### 12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Methyl Isobutyl Carbinol (108-11-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
</tr>
<tr>
<td>ThOD</td>
</tr>
<tr>
<td>BOD (% of ThOD)</td>
</tr>
</tbody>
</table>

#### 12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Methyl Isobutyl Carbinol (108-11-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Pow</td>
</tr>
</tbody>
</table>

#### 12.4. Mobility in soil

<table>
<thead>
<tr>
<th>Methyl Isobutyl Carbinol (108-11-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface tension</td>
</tr>
</tbody>
</table>

Ecology - soil: No (test)data on mobility of the substance available.

#### 12.5. Other adverse effects

No additional information available.

### SECTION 13: Disposal considerations

#### 13.1. Disposal methods

Regional legislation (waste): LWCA (the Netherlands): KGA category 03.

Waste treatment methods: Dispose of contents/container in accordance with licensed collector’s sorting instructions.

Additional information: Flammable vapors may accumulate in the container.

### SECTION 14: Transport information

**Department of Transportation (DOT)**

In accordance with DOT

Transport document description: UN2053 Methyl isobutyl carbinol, 3, III

UN-No.(DOT): UN2053

Proper Shipping Name (DOT): Methyl isobutyl carbinol

Class (DOT): 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

Packing group (DOT): III - Minor Danger
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Hazard labels (DOT) : 3 - Flammable liquid

DOT Packaging Non Bulk (49 CFR 173.xxx) : 203
DOT Packaging Bulk (49 CFR 173.xxx) : 242
DOT Special Provisions (49 CFR 172.102) : B1 - If the material has a flash point at or above 38 C (100 F) and below 93 C (200 F), then the bulk packaging requirements of 173.241 of this subchapter are applicable. If the material has a flash point of less than 38 C (100 F), then the bulk packaging requirements of 173.242 of this subchapter are applicable.
IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).
T2 - 1.5 178.274(d)(2) Normal............. 178.275(d)(3)
TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = 97 / 1 + a (tr - tf) Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.

DOT Packaging Exceptions (49 CFR 173.xxx) : 150
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 60 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 220 L
DOT Vessel Stowage Location : A - The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel.

Emergency Response Guide (ERG) Number : 129
Other information : No supplementary information available.

Transport by sea
Transport document description (IMDG) : UN 2053 METHYL ISOBUTYL CARBINOL, 3, III (41°C c.c.)
UN-No. (IMDG) : 2053
Proper Shipping Name (IMDG) : METHYL ISOBUTYL CARBINOL
Class (IMDG) : 3 - Flammable liquids
Packing group (IMDG) : III - substances presenting low danger
Limited quantities (IMDG) : 5 L
EmS-No. (1) : F-E
EmS-No. (2) : S-D

Air transport
Transport document description (IATA) : UN 2053 Methyl isobutyl carbinol, 3, III
UN-No. (IATA) : 2053
Proper Shipping Name (IATA) : Methyl isobutyl carbinol
Class (IATA) : 3 - Flammable Liquids
Packing group (IATA) : III - Minor Danger

SECTION 15: Regulatory information

15.1. US Federal regulations
Methyl Isobutyl Carbinol (108-11-2)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations
CANADA
Methyl Isobutyl Carbinol (108-11-2)
Listed on the Canadian DSL (Domestic Substances List)
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EU-Regulations

Methyl Isobutyl Carbinol (108-11-2)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

Methyl Isobutyl Carbinol (108-11-2)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on CICR (Turkish Inventory and Control of Chemicals)
Listed on the TCSI (Taiwan Chemical Substance Inventory)

15.3. US State regulations

Methyl Isobutyl Carbinol (108-11-2)
State or local regulations
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Revision date : 04/06/2018

Full text of H-phrases:

<table>
<thead>
<tr>
<th>H226</th>
<th>Flammable liquid and vapour</th>
</tr>
</thead>
<tbody>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation</td>
</tr>
</tbody>
</table>

NFPA health hazard : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA fire hazard : 2 - Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.

SDS US (GHS HazCom 2012)

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