



北京沃凯生物科技有限公司  
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## Certificate of analysis

品名	2-溴-4'-氟苯乙酮 2-Bromo-4' - fluoroacetophenone	CAS	403-29-2
货号	D10372	批次	OK20250301G
生产日期	2025-03-01	复测日期	2027-02-28

执行标准:企业标准

分析项目 SPECIFICATION PROPERTIES	技术指标 STANDARD	实测结果 RESULTS
Appearance 外观	Off-white to light yellow (Solid) 灰白色至淡黄色(固体)	符合 Conforms
1 H NMR Spectrum 1H核磁共振波谱	Consistent with structure 与结构一致	Consistent with structure 与结构一致
Purity (NMR) 纯度(核磁共振)	≥98.0%	符合 Conforms
Water (KF) 水(KF)	0.22%	符合 Conforms
Residue on Ignition 灼烧残渣	0.06%	符合 Conforms

注:此产品仅限用于科研,禁止直接用于临床,如有失误,后果自负。

QA: 杜冰冰

QC: 谢辉



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## 1. PRODUCT AND COMPANY IDENTIFICATION

### 1.1 Product identifier

Product name : 2-Bromo-1-(4-fluorophenyl)ethanone  
Catalog No. : 1032036  
CAS No. : 403-29-2

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : For R&D use only

### 1.3 Details of the supplier of the safety data sheet

Company: Shanghai Haohong Scientific Co., Ltd.  
Tel: 400-821-0725

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

#### GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Skin corrosion/irritation (Category 1A, 1B, 1C),H314

### 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word Danger

Hazard statement(s)

H314 Causes severe skin burns and eye damage

Precautionary statement(s)

Prevention

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P264 Wash hands thoroughly after handling

P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P363 Wash contaminated clothing before reuse.

Storage

P405 Store locked up.

Disposal

P501 Dispose of contents/container to in accordance with local regulation.

## 2.3 Other hazards

None.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Synonyms:	P-FLUOROPHENACYL BROMIDE
Formula:	C <sub>8</sub> H <sub>6</sub> BrFO
Molecular Weight:	217.04
CAS No. :	403-29-2

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

#### Eye contact

Remove any contact lenses, locate eye-wash station, and flush eyes immediately with large amounts of water. Separate eyelids with fingers to ensure adequate flushing. Promptly call a physician.

#### Skin contact

Rinse skin thoroughly with large amounts of water. Remove contaminated clothing and shoes and call a physician.

#### Inhalation

Immediately relocate self or casualty to fresh air. If breathing is difficult, give cardiopulmonary resuscitation (CPR). Avoid mouth-to-mouth resuscitation.

#### Ingestion

Wash out mouth with water; Do NOT induce vomiting; call a physician.

### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2).

### 4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## 5. FIRE FIGHTING MEASURES

### 5.1 Extinguishing media

#### Suitable extinguishing media

Use water spray, dry chemical, foam, and carbon dioxide fire extinguisher.

### 5.2 Special hazards arising from the substance or mixture

During combustion, may emit irritant fumes.

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus and protective clothing.

## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Use full personal protective equipment. Avoid breathing vapors, mist, dust or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Refer to protective measures listed in sections 8.

### 6.2 Environmental precautions

Try to prevent further leakage or spillage. Keep the product away from drains or water courses.

### 6.3 Methods and materials for containment and cleaning up

Absorb solutions with finely-powdered liquid-binding material (diatomite, universal binders); Decontaminate surfaces and equipment by scrubbing with alcohol; Dispose of contaminated material according to Section 13.

### 6.4 Reference to other sections

For disposal see section 13.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Avoid inhalation, contact with eyes and skin. Avoid dust and aerosol formation. Use only in areas with appropriate exhaust ventilation.

### 7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly sealed in cool, well-ventilated area. Keep away from direct sunlight and sources of ignition.

Recommended storage temperature: Storage temp. 2-8°C

Shipping at room temperature if less than 2 weeks.

### 7.3 Specific end use(s)

No data available.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### Components with workplace control parameters

This product contains no substances with occupational exposure limit values.

### 8.2 Exposure controls

#### Engineering controls

Ensure adequate ventilation. Provide accessible safety shower and eye wash station.

#### Personal protective equipment

Eye protection	Safety goggles with side-shields.
Hand protection	Protective gloves.
Skin and body protection	Impervious clothing.
Respiratory protection	Suitable respirator.
Environmental exposure controls	Keep the product away from drains, water courses or the soil. Clean spillages in a safe way as soon as possible.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Appearance	Solid
Odor	No data available
Odor threshold	No data available
pH	No data available
Melting/freezing point	47-49°C
Boiling point/range	251.9°C at 760 mmHg
Flash point	113°C
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	No data available
Vapor pressure	No data available

<b>Vapor density</b>	No data available
<b>Relative density</b>	No data available
<b>Water Solubility</b>	No data available
<b>Partition coefficient</b>	No data available
<b>Auto-ignition temperature</b>	No data available
<b>Decomposition temperature</b>	No data available
<b>Viscosity</b>	No data available
<b>Explosive properties</b>	No data available
<b>Oxidizing properties</b>	No data available

## 9.2 Other safety information

No data available.

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available.

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available.

### 10.4 Conditions to avoid

No data available.

### 10.5 Incompatible materials

Strong acids/alkalis, strong oxidising/reducing agents.

### 10.6 Hazardous decomposition products

Under fire conditions, may decompose and emit toxic fumes.

Other decomposition products - no data available.

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

Classified based on available data. For more details, see section 2

#### Skin corrosion/irritation

Classified based on available data. For more details, see section 2

#### Serious eye damage/irritation

Classified based on available data. For more details, see section 2

#### Respiratory or skin sensitization

Classified based on available data. For more details, see section 2

#### Germ cell mutagenicity

Classified based on available data. For more details, see section 2

#### Carcinogenicity

IARC: No component of this product present at a level equal to or greater than 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at a level equal to or greater than 0.1% is identified as a potential or confirmed carcinogen by ACGIH.

NTP: No component of this product present at a level equal to or greater than 0.1% is identified as a anticipated or confirmed carcinogen by NTP.

OSHA: No component of this product present at a level equal to or greater than 0.1% is identified as a potential or confirmed carcinogen by OSHA.

#### **Reproductive toxicity**

Classified based on available data. For more details, see section 2

#### **Specific target organ toxicity - single exposure**

Classified based on available data. For more details, see section 2

#### **Specific target organ toxicity - repeated exposure**

Classified based on available data. For more details, see section 2

#### **Aspiration hazard**

Classified based on available data. For more details, see section 2

#### **Additional information**

Cough, Shortness of breath, Headache, Nausea, Vomiting.

This information is based on our current knowledge. However the chemical, physical, and toxicological properties have not been completely investigated.

## **12. ECOLOGICAL INFORMATION**

### **12.1 Toxicity**

No data available.

### **12.2 Persistence and degradability**

No data available.

### **12.3 Bioaccumulative potential**

No data available.

### **12.4 Mobility in soil**

No data available.

### **12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment unavailable as chemical safety assessment not required or not conducted.

### **12.6 Other adverse effects**

No data available.

## **13. DISPOSAL CONSIDERATIONS**

### **13.1 Waste treatment methods**

#### **Product**

Dispose substance in accordance with prevailing country, federal, state and local regulations.

#### **Contaminated packaging**

Conduct recycling or disposal in accordance with prevailing country, federal, state and local regulations.

## **14. TRANSPORT INFORMATION**

### **DOT (US)**

Proper shipping name: CORROSIVE SOLID,ACIDIC,ORGANIC,N. O. S.

UN number: 3261

Class: 8

Packing group: II

**IMDG**

Proper shipping name: CORROSIVE SOLID,ACIDIC,ORGANIC,N. O. S.

UN number: 3261

Class: 8

Packing group: II

**IATA**

Proper shipping name: CORROSIVE SOLID,ACIDIC,ORGANIC,N. O. S.

UN number: 3261

Class: 8

Packing group: II

**15. REGULATORY INFORMATION****SARA 302 Components:**

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

**SARA 313 Components:**

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 311/312 Hazards:**

Acute Health Hazards.

**Massachusetts Right To Know Components:**

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

**Pennsylvania Right To Know Components:**

No components are subject to the Pennsylvania Right to Know Act.

**New Jersey Right To Know Components:**

No components are subject to the New Jersey Right to Know Act.

**California Prop. 65 Components:**

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or anyother reproductive harm.

**16. OTHER INFORMATION**

Copyright Leyan. The above information is correct to the best of our present knowledge but does not purport to be all inclusive and should be used only as a guide. The product is for research use only and for experienced personnel. It must only be handled by suitably qualified experienced scientists in appropriately equipped and authorized facilities. The burden of safe use of this material rests entirely with the user. Leyan disclaims all liability for any damage resulting from handling or from contact with this product.

# ==== Analysis Report ====

CAS NO. : 403-29-2  
Method Filename : GC-FQ.gcm  
Batch Filename : 20240419.gcb  
Vial # : 80

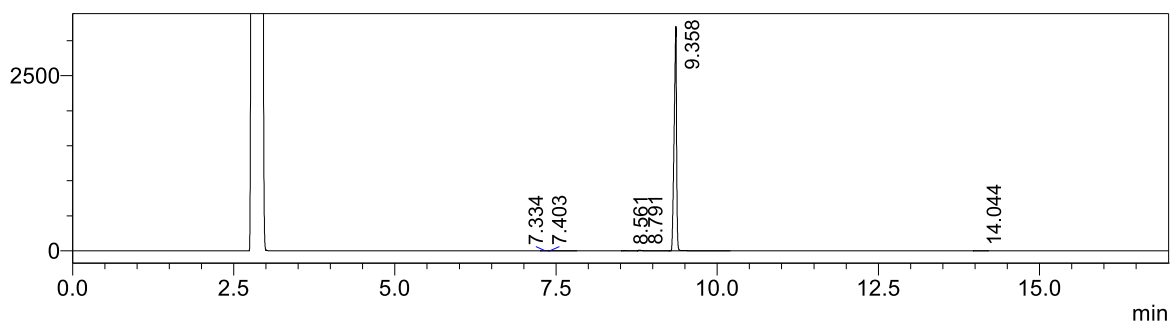
Injection Volume : 1 uL  
Date Acquired : 4/19/2024 6:04:31 PM  
Date Processed : 4/22/2024 8:58:08 AM

Sample Type : Unknown

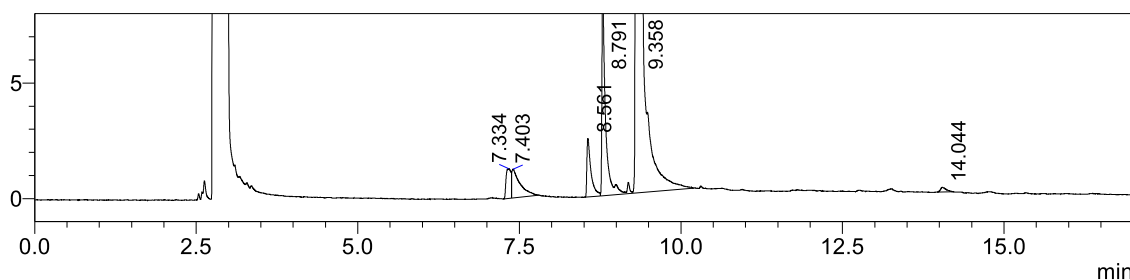
Acquired by : yangleilei  
Processed by : yangleilei

## <Chromatogram>

mV



mV



## <Peak Table>

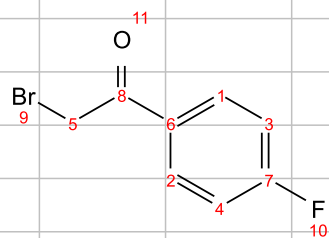
FID1

Peak#	Name	Ret. Time	solution(US	Area	Height	Area%
1		7.334	--	6593	1286	0.079
2		7.403	0.215	11341	1238	0.136
3		8.561	5.027	11267	2523	0.135
4		8.791	2.605	33870	8726	0.405
5		9.358	7.516	8301669	3162966	99.232
6		14.044	36.192	1218	202	0.015
Total				8365958	3176941	100.000





CAS NO. : 403-29-2, CDCL3



$^1\text{H}$  NMR (400 MHz, Chloroform-*d*)  $\delta$  8.07 – 7.98 (m, 2H),  
7.22 – 7.12 (m, 2H), 4.41 (s, 2H).

