

# Identification of Isopropyl Citrate - Japanese Standards for Food Additives (9th edition)

Isopropyl citrate is a food additive used to prevent food oxidation.

The confirmation test (2) for isopropyl citrate in the Japanese Standards for Food Additives (up to the 8th edition) was made using a precipitation reaction that required a reflux operation. But from the 9th edition this was changed to a GC method. In accordance with the new identification test (2) for isopropyl citrate described in the official formula, this application note demonstrates a test made using InertCap AQUATIC-2 a neutral polar capillary column, and the results were found to be excellent.

## Measurement procedure

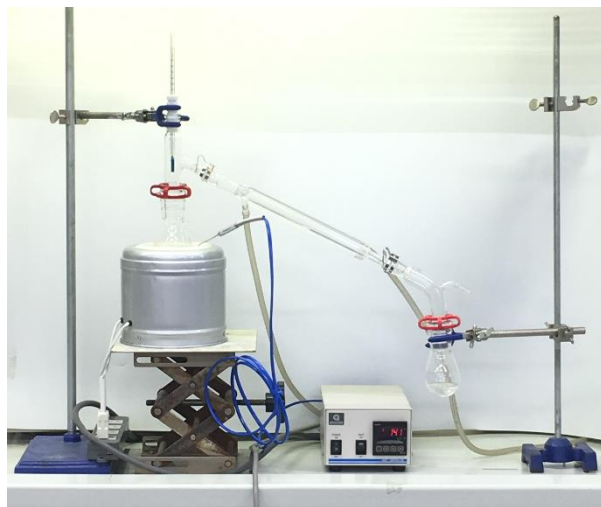
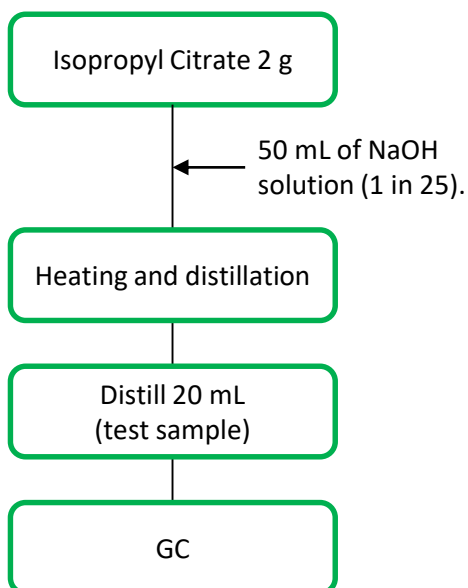


FIG. 1: Distillation

The retention time of the main peak in the test sample is consistent with that of 2-propanol in the standard (\*).

\* Standard... 2-propanol solution (1 in 5)

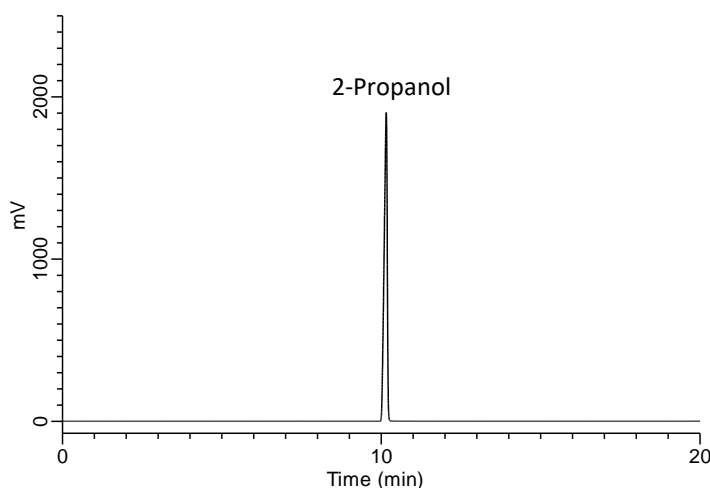
## Assay conditions

### Conditions

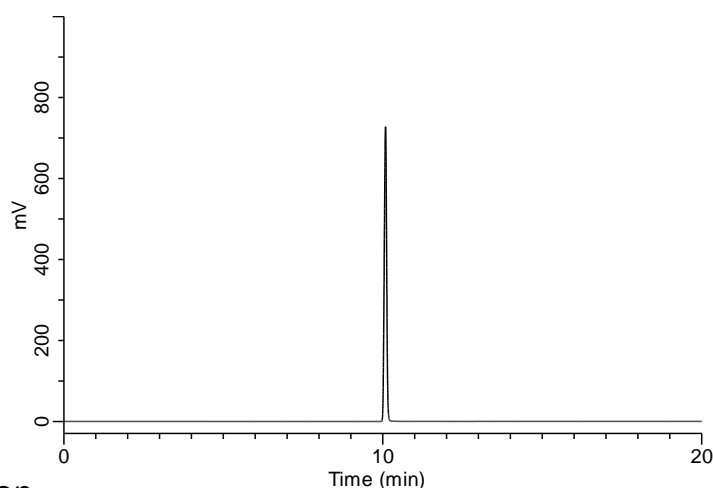
<b>System</b>	: GC - FID
<b>Column</b>	: InertCap AQUATIC-2 0.25 mm I.D. x 60 m df = 1.40 $\mu$ m
<b>Col. Cat. No.</b>	: 1010-19166
<b>Col. Temp.</b>	: 40 °C (6 min hold) - 5 °C/min - 110 °C (10 min hold)
<b>Carrier Gas</b>	: He 1.3 mL/min * Adjust the flow rate so that 2-propanol is eluted in approx. 10 minutes.
<b>Injection</b>	: Split 100:1 200 °C
<b>Injection Vol.</b>	: 1 $\mu$ L
<b>Detection</b>	: FID Auto Range 250 °C

## Measurement

### Chromatogram of the standard



### Chromatogram of the test sample



### Relative standard deviation

The relative standard deviation was determined to confirm the reproducibility of this test.

Table 1. Repeatability of 2-propanol area values for the standard and the test sample

2-Propanol	1 st	2 nd	3 rd	4 th	5 th	Ave.	Standard deviation	Relative standard deviation (%)
Standard	12727879	12634489	12742957	12688097	12839288	12726542	75721	0.59
Test sample	3894261	3904791	3841486	3712060	3797372	3829994	78787	2.06

GL Sciences disclaims any and all responsibility for any injury or damage which may be caused by this data directly or indirectly. We reserve the right to amend this information or data at any time and without any prior announcement.

#### **GL Sciences, Inc. Japan**

22-1 Nishishinjuku 6-Chome  
Shinjuku-ku, Tokyo,  
163-1130, Japan  
Phone: +81-3-5323-6620  
Fax: +81-3-5323-6621  
Email: [world@glsc.co.jp](mailto:world@glsc.co.jp)  
Web: [www.glsciences.com](http://www.glsciences.com)

#### **GL Sciences B.V.**

De Sleutel 9  
5652 AS Eindhoven  
The Netherlands  
Phone: +31 (0)40 254 95 31  
Email: [info@glsciences.eu](mailto:info@glsciences.eu)  
Web: [www.glsciences.eu](http://www.glsciences.eu)

#### **GL Sciences, Inc. USA**

4733 Torrance Blvd. Suite 255  
Torrance, CA 90503  
Phone: 310-265-4424  
Fax: 310-265-4425  
Email: [info@glsciencesinc.com](mailto:info@glsciencesinc.com)  
Web: [www.glsciencesinc.com](http://www.glsciencesinc.com)

#### **GL Sciences (ShangHai) Ltd.**

Tower B, Room 2003,  
Far East International Plaza,  
NO,317 Xianxia Road,  
Changning District.  
Shanghai, China P.C. 200032  
Phone: +86 (0)21-6278-2272  
Email: [contact@glsciences.com.cn](mailto:contact@glsciences.com.cn)  
Web: [www.glsciences.com.cn](http://www.glsciences.com.cn)

#### **International Distributors**

Visit our Website at [www.glsciences.com/distributors](http://www.glsciences.com/distributors)