

GAYLORD CHEMICAL CORP.
TITLE: TITRABLE ACID CONTENT
DOCUMENT #: WI-QA-029E
DOCUMENT TYPE: WORK INSTRUCTION

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TITRABLE ACID CONTENT

1.0 Purpose

To analyze DMSO for titrable acid per our shipping specs

2.0 Safety/Health

2.1 PPE

Wear standard laboratory safety glasses and butyl rubber gloves. The dilute caustic used in this procedure poses a minimum safety risk.

2.2 Safety Systems

N/A

2.3 Health Hazards

Refer to the Material Safety Data Sheets located in the Catalog of Chemicals.

3.0 Process Description

3.1 Process Overview

The acid content of our DMSO is an indication of shelf life. If the titrable acid is too high, the DMSO will decompose faster.

3.2 Scope/Boundaries

N/A

3.3 Equipment Involved

250mL Erlenmeyer flask
1mL pipet, 0.01mL graduated balance
100mL graduated cylinder

3.4 Reagents

0.01N Sodium Hydroxide
Reagent grade water
Phenolphthalein indicator (1% solution in 70%
Isopropanol)

4.0 Procedure

On a balance, add 50 grams of Dimethyl Sulfoxide to the 250mL flask. Using the graduated cylinder, add 100ml of reagent grade water to the sample flask. Swirl the flask until DMSO and water are completely in solution. Now add a five drops of phenolphthalein indicator and swirl the flask again.

Titrate the sample to a pink endpoint with 0.01N NaOH. Record the number of milliliters of NaOH used to titrate. The calculation for conversion of milliliters titrant used to milliequivalents acid per gram sample is listed below.

5.0 Documentation

6.0 Glossary

None associated with this procedure.

7.0 Reference

ACS 9th Edition

8.0 Test Specification

An example of 2.0ml of titrant will be used in the following calculation to demonstrate the conversion.

$$\begin{aligned} & (2.0\text{ml NaOH}) (0.01\text{N NaOH}) / 50 \text{ grams} \\ & = 0.0004 \text{ milli equivalents per gram of titrable acid} \end{aligned}$$

Test specification is:

0.001 meq/gram