

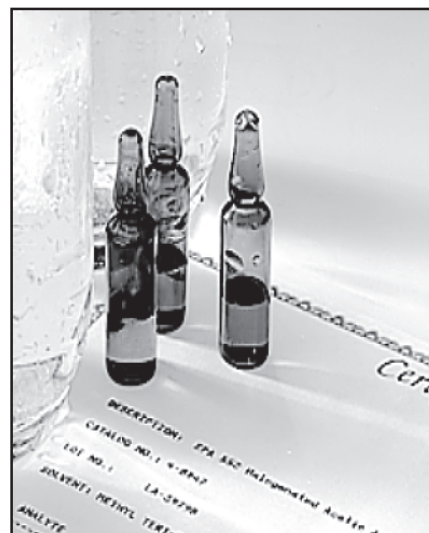
## Product Information

### Reference Standards for ICR — Haloacetic Acids

Supelco manufactures chemical reference standards for the calibration of capillary gas chromatographs used in the determination of the byproducts of drinking water disinfection. These byproducts have the potential to produce adverse human health effects. The US EPA has promulgated three methods – 552, 552.1, and 552.2 – to monitor the levels of disinfection byproducts. Laboratories which support water systems needing to determine disinfection byproducts are required to use these methods.

Method 552 lists six haloacetic acids and two chlorinated phenols. Method 552.1 includes the same six haloacetic acids as well as dalapon (2,2-dichloropropanoic acid), but does not include chlorinated phenols. Method 552.2 lists 9 haloacetic acids and dalapon. All three methods specify capillary gas chromatography with electron capture detector. Methods 552 and 552.2 use liquid/liquid extraction, while Method 552.1 uses liquid/solid extraction. All three methods include derivatization of the haloacetic acids to their respective esters.

Supelco offers haloacetic acids, their respective esters and derivatizing reagents to allow the analyst to quantitatively calibrate his chromatograph with all of the compounds listed in the three methods. Each standard compound is lot controlled and its identity and purity have been verified. All balances used are evaluated before each lot is prepared, using NIST Class S traceable weights. Gravimetric processes are controlled within  $\pm 0.5\%$ . All volumetric glassware used is NIST Class A traceable. Analysis of the finished product is conducted using capillary GC with electron capture detector. Each reference standard is blanketed in nitrogen and sealed in an amber glass ampul.



994-0076

#### Haloacetic Acids - Method 552

##### Calibration Standards

##### EPA 552 Halogenated Acetic Acids Mix

2000  $\mu\text{g}/\text{mL}$  each component in methyl tert-butyl ether.

Bromoacetic acid	Dibromoacetic acid
Bromochloroacetic acid	Dichloroacetic acid
Chloroacetic acid	Trichloroacetic acid

1 mL **48047**

##### EPA 552 Esters Calibration Mix

1000  $\mu\text{g}/\text{mL}$  each component in methyl tert-butyl ether.

Methyl bromoacetate	Methyl dibromoacetate
Methyl bromochloroacetate	Methyl dichloroacetate
Methyl chloroacetate	Methyl trichloroacetate

1 mL **47598-U**

##### Single Component Phenol Standard

5000  $\mu\text{g}/\text{mL}$  each in 1 mL methanol.

2,4-Dichlorophenol	<b>40029</b>
2,4,6-Trichlorophenol	<b>40019</b>

#### Surrogate Standards

##### Single Component Standards

1000  $\mu\text{g}/\text{mL}$  each in 1 mL methyl tert-butyl ether.

3,5-Dichlorobenzoic acid	<b>502316</b>
2,3-Dichloropropionic acid	<b>47670-U</b>

##### Internal Standard

##### Single Component Standard

##### 1,2,3-Trichloropropane

1000  $\mu\text{g}/\text{mL}$  in methyl tert-butyl ether  
 1 mL **47669-U**

#### Haloacetic Acids and Dalapon - Method 552.1

##### EPA 552.1 Acids Calibration Mix with Surrogate

Components at indicated concentrations in methyl tert-butyl ether. **8 components.**

Bromoacetic acid, 200 $\mu\text{g}/\text{mL}$
Bromochloroacetic acid, 200 $\mu\text{g}/\text{mL}$
2-Bromopropionic acid, 100 $\mu\text{g}/\text{mL}$ (surrogate)
Chloroacetic acid, 300 $\mu\text{g}/\text{mL}$
Dalapon, 200 $\mu\text{g}/\text{mL}$
Dibromoacetic acid, 100 $\mu\text{g}/\text{mL}$
Dichloroacetic acid, 300 $\mu\text{g}/\text{mL}$
Trichloroacetic acid, 100 $\mu\text{g}/\text{mL}$

1 mL **47652-U**

## Haloacetic Acids and Dalapon - Method 552.2 Calibration Standards

### EPA 552.2 Acids Calibration Mix ICR

With surrogate.

Components at indicated concentrations in methyl tert-butyl ether. **11 components.**

Bromoacetic acid, 200 µg/mL  
Bromochloroacetic acid, 200 µg/mL  
Bromodichloroacetic acid, 200 µg/mL  
2-Bromopropionic acid, 100 µg/mL (surrogate)  
Chloroacetic acid, 300 µg/mL  
Chlorodibromoacetic acid, 200 µg/mL  
Dalapon, 200 µg/mL  
Dibromoacetic acid, 100 µg/mL  
Dichloroacetic acid, 300 µg/mL  
Tribromoacetic acid, 100 µg/mL  
Trichloroacetic acid, 100 µg/mL

1 mL **47629-U**

### EPA 552.2 Esters Calibration Mix ICR

With surrogate.

Components at indicated concentrations in methyl tert-butyl ether. **11 components.**

Methyl bromoacetate, 200 µg/mL  
Methyl bromochloroacetate, 200 µg/mL  
Methyl bromodichloroacetate, 200 µg/mL  
Methyl 2-bromopropionate, 100 µg/mL (surrogate)  
Methyl chloroacetate, 300 µg/mL  
Methyl chlorodibromoacetate, 200 µg/mL  
Dalapon methyl ester, 200 µg/mL  
Methyl dibromoacetate, 100 µg/mL  
Methyl dichloroacetate, 300 µg/mL  
Methyl tribromoacetate, 100 µg/mL  
Methyl trichloroacetate, 100 µg/mL

1 mL **47630-U**

### EPA 552.2 Acids Calibration Mix

Without dalapon or surrogate.

Components at indicated concentrations in methyl tert-butyl ether. **9 components.**

Bromoacetic acid, 400 µg/mL  
Bromochloroacetic acid, 400 µg/mL  
Bromodichloroacetic acid, 400 µg/mL  
Chloroacetic acid, 600 µg/mL  
Chlorodibromoacetic acid, 1000 µg/mL  
Dibromoacetic acid, 200 µg/mL  
Dichloroacetic acid, 600 µg/mL  
Tribromoacetic acid, 2000 µg/mL  
Trichloroacetic acid, 200 µg/mL

1 mL **47787**

### EPA 552.2 Esters Calibration Mix

Without dalapon ester or surrogate.

Components at indicated concentrations in methyl tert-butyl ether. **9 components.**

Methyl bromoacetate, 400 µg/mL  
Methyl bromochloroacetate, 400 µg/mL  
Methyl bromodichloroacetate, 400 µg/mL  
Methyl chloroacetate, 600 µg/mL  
Methyl chlorodibromoacetate, 1000 µg/mL  
Methyl dibromoacetate, 200 µg/mL  
Methyl dichloroacetate, 600 µg/mL  
Methyl tribromoacetate, 2000 µg/mL  
Methyl trichloroacetate, 200 µg/mL

1 mL **47788**

### Internal Standard Single Component Standard

#### 1,2,3-Trichloropropane

1000 µg/mL in methyl tert-butyl ether

1 mL **47669-U**

## Surrogate Standards

### Single Component Standards

Each 1000 µg/mL in 1 mL methyl tert-butyl ether.

#### Acids

2-Bromopropionic acid **47645**  
2,3-Dibromopropionic acid **47789**

#### Esters

Methyl-2-bromopropionate **47668-U**  
Methyl-2,3-dibromopropionate **46970-U**

## Derivatization Products

### Diazald Kit for Method 552

The Diazald Kit is a set of distillation glassware designed for the safe preparation of diazomethane (~100 mmol). Glassware is without sharp edges on ground-glass joints. The Diazald Kit features 3/19/22 Clear-Seal joints; these joints do not require grease even for vacuum applications, thus avoiding that source of contamination.

For replacement parts, contact our Technical Service department (phone 800-359-3041 or 814-359-3041).

Diazald Kit **Z10,0250**

### Methanolic Sulfuric Acid

Methylating reagent for Methods 552.1 and 552.2.

10% H<sub>2</sub>SO<sub>4</sub> in methanol.

6 x 5 mL **506516**

## Single Component Solutions

Each 1000 µg/mL in 1 mL methyl tert-butyl ether.

Acids		Esters	
Description	Cat. No.	Description	Cat. No.
Bromoacetic acid	<b>47655-U</b>	Methyl bromoacetate	<b>47662-U</b>
Bromochloroacetic acid	<b>47659-U</b>	Methyl bromochloroacetate	<b>47666-U</b>
Bromodichloroacetic acid	<b>47278</b>	Methyl bromodichloroacetate	<b>47761</b>
Chloroacetic acid	<b>47654-U</b>	Methyl chloroacetate	<b>47661-U</b>
Chlorodibromoacetic acid	<b>47277</b>	Methyl chlorodibromoacetate	<b>47762</b>
Dalapon	<b>47656-U</b>	Dalapon methyl ester	<b>47663-U</b>
Dibromoacetic acid	<b>47660-U</b>	Methyl dibromoacetate	<b>47667-U</b>
Dichloroacetic acid	<b>47657-U</b>	Methyl dichloroacetate	<b>47664-U</b>
Tribromoacetic acid	<b>47729-U</b>	Methyl tribromoacetate	<b>47730-U</b>
Trichloroacetic acid	<b>47658-U</b>	Methyl trichloroacetate	<b>47665-U</b>

Contact our Technical Service Department (phone 800-359-3041 or 814-359-3041, FAX 814-359-5468) for expert answers to your questions.

#### Trademarks

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