

# Alcohols

Alcohols (in 1 mL of solvent, unless otherwise noted)

ALCOHOLS	CAS NO.	QTY./CONC.	MATRIX	CAT. NO.
Allyl alcohol	107-18-6	1 mg/mL	MeOH	AS-E0475
		10 mg/mL	Water	M-8015B/5031-05
Benzyl alcohol	100-51-6	100 µg/mL	MeOH	APP-9-021
		5 mg/mL	MeOH	APP-9-021-50X
		5 mg/mL	AcCN	AS-E0326
1-Butanol	71-36-3	10 mg/mL	Water	M-8015B/5031-06
t-Butanol	75-65-0	2 mg/mL	MeOH	S-410
		10 mg/mL	Water	M-8015B/5031-07
1,3-Dichloro-2-propanol	96-23-1	5 mg/mL	MeOH	AS-E0928
Ethanol	64-17-5	10 mg/mL	Water	M-8015B/5031-11
Ethylene glycol	107-21-1	10 mg/mL	Water	M-8015B/5031-13
Isobutanol	78-83-1	10 mg/mL	Water	M-8015B/5031-15
Isobutyl alcohol	78-83-1	100 µg/mL	MeOH	APP-9-120
Isopropanol	67-63-0	10 mg/mL	Water	M-8015B/5031-16
Methanol	67-56-1	10 mg/mL	Water	M-8015B/5031-17
2-Methyl-1-propanol (Isobutyl alcohol)	78-83-1	5 mg/mL	MeOH	AS-E0659
PEG-600	25322-68-3	2.5 mg/mL	THF	M-1673
1-Propanol	71-23-8	10 mg/mL	Water	M-8015B/5031-24
Propargyl alcohol	107-19-7	1 mg/mL	Cyclohexanone	AS-E0543

## Kits for Qualitative Analysis & Identification

### C<sub>1</sub>-C<sub>5</sub> Alcohols

**PS-111C**
**15 units**

Neat at the stated quantities.

(01) Methanol	1 mL
(02) Ethanol	2 mL
(03) 1-Propanol	2 mL
(04) 2-Propanol	2 mL
(05) 1-Butanol	2 mL
(06) 2-Butanol	2 mL
(07) 2-Methyl-1-propanol	2 mL
(08) 2-Methyl-2-propanol	2 mL
(09) 1-Pentanol	2 mL
(10) 2-Pentanol	2 mL
(11) 3-Pentanol	2 mL
(12) 2-Methyl-1-butanol	2 mL
(13) 3-Methyl-1-butanol	2 mL
(14) 2-Methyl-2-butanol	2 mL
(15) Alcohols Mixture PS-11C2	2 mL
At the stated weight %	
1-Propanol	9.1%
2-Methyl-1-propanol	9.1%
1-Butanol	9.2%
4-Methyl-2-pentanol	26.7%
1-Pentanol	27.0%
2-Ethyl-1-butanol	18.9%

### Calibration Mixture

**PS-11C**
**1 x 2 mL**

Neat at the stated weight % listed above

### C<sub>6</sub>-C<sub>8</sub> Alcohols

**PS-131C**
**15 units**

2 mL each. Neat.

(01) 1-Hexanol	
(02) 2-Hexanol	
(03) 3-Hexanol	
(04) 2-Methyl-1-pentanol	
(05) 4-Methyl-2-pentanol	
(06) 2-Methyl-3-pentanol	
(07) 3-Methyl-3-pentanol	
(08) 2-Ethyl-1-butanol	
(09) 3,3-Dimethyl-2-butanol	
(10) 1-Heptanol	
(11) 2-Heptanol	
(12) 2,4-Dimethyl-3-pentanol	
(13) 1-Octanol	
(14) 2-Octanol	
(15) Alcohols Mixture PS-13C	
At the stated weight %.	
3-Methyl-3-pentanol	11.1%
1-Pentanol	4.2%
2-Ethyl-1-butanol	11.1%
1-Hexanol	16.6%
Cyclohexanol	29.1%
1-Heptanol	27.9%

### Calibration Mixture

**PS-13C**
**1 x 2 mL**

Neat at the stated weight % listed above

### nC<sub>6</sub>-C<sub>22</sub> Alcohols

**PS-121C**
**15 units**

2 mL each at the stated concentrations by weight % in Ethylbenzene solvent.

(01) 1-Hexanol	Neat
(02) 1-Heptanol	Neat
(03) 1-Octanol	Neat
(04) 1-Nonanol	Neat
(05) 1-Decanol	Neat
(06) 1-Undecanol	Neat
(07) 1-Dodecanol	10%
(08) 1-Tridecanol	10%
(09) 1-Tetradecanol	10%
(10) 1-Pentadecanol	10%
(11) 1-Hexadecanol	10%
(12) 1-Octadecanol	5%
(13) 1-Eicosanol	5%
(14) 1-Docosanol	5%
(15) Alcohols Mixture PS-12C	Neat
At the stated weight %	
1-Butanol	45.8%
1-Pentanol	22.3%
1-Hexanol	17.7%
1-Heptanol	14.3%

### Calibration Mixture

**PS-12C**
**1 x 2 mL**

Neat at the stated weight % listed above

### nC<sub>6</sub>-C<sub>22</sub> Alcohols, NEAT

**PS-121CX**
**15 units**

 Vials 1 through 6 & 15, 2 mL each.  
 Vials 7 through 14, 0.5 g each.

# Aldehydes

Aldehydes (in 1 mL of solvent, unless otherwise noted)

Aldehydes

ALDEHYDES	CAS NO.	QTY./CONC.	MATRIX	CAT. NO.
Acetaldehyde	75-07-0	1 mg/mL	MeOH	M-554-01
		1 mg/mL	Water	M-8315-01
Acetaldehyde-DNPH	1019-57-4	0.1 mg/mL	AcCN	M-8315-R-DNPH-01
		1 mg/mL	MeOH:AcCN	M-554-DNPH-01
Acrolein	107-02-8	100 µg/mL	MeOH	APP-9-007
		1 mg/mL	MeOH	APP-9-007-10X
		5 mg/mL	p-Dioxane	AS-E0002
		10 mg/mL	Water	M-8015B/5031-03
		1 µg/mL	AcCN	S-1275-1-03
Acrolein-DNPH	888-54-0	0.1 mg/mL	AcCN	M-8315-R-DNPH-03
Benzaldehyde-DNPH	1157-84-2	0.1 mg/mL	AcCN	M-8315-R-DNPH-04
Butanal	123-72-8	1 mg/mL	MeOH	M-554-02
Butanal-DNPH	1527-98-6	0.1 mg/mL	AcCN	M-8315-R-DNPH-05
		1 mg/mL	MeOH:AcCN	M-554-DNPH-02
Crotonaldehyde	123-73-9	1 mg/mL	AcCN	AS-E0479
		1 mg/mL	MeOH	M-554-03
		10 mg/mL	Water	M-8015B/5031-08
Crotonaldehyde-DNPH	1527-96-4	1 mg/mL	MeOH:AcCN	M-554-DNPH-03
		0.1 mg/mL	AcCN	M-8315-R-DNPH-06
Decanal	112-31-2	1 mg/mL	MeOH	M-554-05
Decanal-DNPH		1 mg/mL	MeOH:AcCN	M-554-DNPH-05
		0.1 mg/mL	AcCN	M-8315-R-DNPH-08
2,5-Dimethylbenzaldehyde-DNPH	152477-96-8	0.1 mg/mL	AcCN	M-8315-R-DNPH-09
Formaldehyde	50-00-0	1 mg/mL	MeOH	M-554-06
		1 mg/mL	Water	M-8315-02
Formaldehyde-DNPH	1081-15-8	1 mg/mL	MeOH:AcCN	M-554-DNPH-06
		0.1 mg/mL	AcCN	M-8315-R-DNPH-10
Heptanal	111-71-7	1 mg/mL	MeOH	M-554-07
Heptanal-DNPH		1 mg/mL	MeOH:AcCN	M-554-DNPH-07
		0.1 mg/mL	AcCN	M-8315-R-DNPH-11
Hexanal	66-25-1	1 mg/mL	MeOH	M-554-08
Hexanal-DNPH	1527-97-5	1 mg/mL	MeOH:AcCN	M-554-DNPH-08
		0.1 mg/mL	AcCN	M-8315-R-DNPH-12
Isovaleraldehyde-DNPH	2256-01-1	0.1 mg/mL	AcCN	M-8315-R-DNPH-13
Nonanal	124-19-6	1 mg/mL	MeOH	M-554-09
Nonanal-DNPH		0.1 mg/mL	AcCN	M-8315-R-DNPH-14
		1 mg/mL	MeOH:AcCN	M-554-DNPH-09
Octanal	124-13-0	1 mg/mL	MeOH	M-554-10
Octanal-DNPH		0.1 mg/mL	AcCN	M-8315-R-DNPH-15
		1 mg/mL	MeOH:AcCN	M-554-DNPH-10
Paraldehyde	123-63-7	10 mg/mL	Water	M-8015B/5031-21
Pentanal	110-62-3	1 mg/mL	MeOH	M-554-11
Pentanal-DNPH	2057-84-3	0.1 mg/mL	AcCN	M-8315-R-DNPH-16
		1 mg/mL	MeOH:AcCN	M-554-DNPH-11
Propanal	123-38-6	1 mg/mL	MeOH	M-554-12
Propanal-DNPH	725-00-8	0.1 mg/mL	AcCN	M-8315-R-DNPH-17
		1 mg/mL	MeOH:AcCN	M-554-DNPH-12
m-Tolualdehyde-DNPH	2880-05-9	0.1 mg/mL	AcCN	M-8315-R-DNPH-18
o-Tolualdehyde-DNPH	1773-44-0	0.1 mg/mL	AcCN	M-8315-R-DNPH-19
p-Tolualdehyde-DNPH	2571-00-8	0.1 mg/mL	AcCN	M-8315-R-DNPH-20

## European Equivalents of Alcohol Oxidation Products in Automotive Engine Exhaust by HPLC of DNPH Derivatives

The California Air Resources Board, in conjunction with some of the larger automobile manufacturers, has developed an HPLC Method in which the 2,4-Dinitrophenylhydrazine derivatives of the by-products are quantitated. Stated concentrations are the equivalent carbonyl quantity before derivatization.

### Carbonyl-DNPH Mix 1

**AE-00043** 1 x 1 mL  
20 µg/mL each in Acetonitrile 13 comps.

Acetaldehyde-DNPH  
Acetone-DNPH  
Acrolein-DNPH  
Benzaldehyde-DNPH  
Butanone-DNPH  
n-Butylaldehyde-DNPH  
Crotonaldehyde-DNPH  
Formaldehyde-DNPH (40 µg/mL)  
Hexanal-DNPH  
Methacrolein-DNPH  
Propionaldehyde-DNPH  
p-Tolualdehyde-DNPH  
Valeraldehyde-DNPH

### Carbonyl-DNPH Mix 2

**AE-00044** 1 x 1 mL  
2 µg/mL each in Acetonitrile 14 comps.

Acetaldehyde-DNPH  
Acetone-DNPH  
Acrolein-DNPH  
Benzaldehyde-DNPH  
Butanone-DNPH  
n-Butylaldehyde-DNPH  
Crotonaldehyde-DNPH  
Cyclohexanone-DNPH (5 µg/mL)  
Formaldehyde-DNPH (40 µg/mL)  
Hexanal-DNPH  
Methacrolein-DNPH  
Propionaldehyde-DNPH  
p-Tolualdehyde-DNPH  
Valeraldehyde-DNPH

### Cyclohexanone

**AE-00046** 1 x 1 mL  
500 µg/mL in Acetonitrile

Cyclohexanone

## Kits for Qualitative Analysis & Identification

### Aldehydes

**PS-450E** 15 units  
2 mL each at the stated concentrations by weight % in Toluene solvent.

(01) Propionaldehyde (Propanal)	Neat
(02) Butyraldehyde (Butanal)	Neat
(03) Isobutyraldehyde (2-Methylpropanal)	Neat
(04) Valeraldehyde (Pentanal)	Neat
(05) Isovaleraldehyde (3-Methylbutanal)	Neat
(06) Caproic aldehyde (Hexanal)	Neat
(07) Enanthaldehyde (Heptanal)	Neat
(08) Caprylaldehyde (Octanal)	Neat
(09) Pelargonaldehyde (Nonanal)	Neat
(10) Capraldehyde (Decanal)	10%
(11) Undecylaldehyde (Hendecanal)	10%
(12) Lauraldehyde (Dodecanal)	10%
(13) Tridecylaldehyde (Tridecanal)	10%
(14) Myristaldehyde (Tetradecanal)	10%
(15) Benzaldehyde (Benzencarbonal)	Neat

# Aldehydes

## Method 554 Carbonyl Compounds as DHPH Derivatives on HPLC

### Carbonyl Compounds

<b>M-554-R1</b>		<b>1 x 1 mL</b>
1.0 mg/mL each in AcCN 12 comps.		
Acetaldehyde	Heptanal	
Butanal	Hexanal	
Crotonaldehyde	Nonanal	
Cyclohexanone	Octanal	
Decanal	Pentanal	
Formaldehyde	Propanal	

### DNPH derivatives

<b>M-554-DNPH-SET</b>		<b>set of 12 x 1 mL</b>
Each at 1.0 mg/mL in MeOH : AcCN (19:1)		
<b>M-554-DNPH</b>		<b>1 x 1 mL</b>
1.0 mg/mL each in MeOH : AcCN (19:1) (Solution of 12 analytes)		
	1 mL @ 1.0 mg/mL In MeOH	
Acetaldehyde-DNPH	M-554-DNPH-01 ‡	
Butanal-DNPH	M-554-DNPH-02	
Crotonaldehyde-DNPH	M-554-DNPH-03 ‡	
Cyclohexanone-DNPH	M-554-DNPH-04	
Decanal-DNPH	M-554-DNPH-05	
Formaldehyde-DNPH	M-554-DNPH-06	
Heptanal-DNPH	M-554-DNPH-07	
Hexanal-DNPH	M-554-DNPH-08	
Nonanal-DNPH	M-554-DNPH-09	
Octanal-DNPH	M-554-DNPH-10	
Pentanal-DNPH	M-554-DNPH-11	
Propanal-DNPH	M-554-DNPH-12	

‡ To help prevent premature breakdown of thermally labile products when in transit, we suggest you request a "Cold Pack".

## Method 556/556.1 Carbonyl Compounds by PFBHA Derivatives with analysis by GC/ECD

### Carbonyl Compounds by ECD when derivatized

<b>M-556</b>		<b>1 x 1 mL</b>
<b>M-556-PAK</b>	<b>SAVE</b>	<b>5 x 1 mL</b>
1.0 mg/mL each in AcCN 15 comps.		
Acetaldehyde	Heptanal	
Benzaldehyde	Hexanal	
Butanal	Methyl glyoxal	
Crotonaldehyde	Nonanal	
Cyclohexanone	Octanal	
Decanal	Pentanal	
Formaldehyde	Propanal	
Glyoxal		

### PFBHA Reagent

<b>M-556-DER-SET</b>		<b>10 x 1 mL</b>
<b>M-556-DER-10ML</b>		<b>1 x 10 mL</b>
<b>M-556-DER-10ML-PAK</b>	<b>SAVE</b>	<b>5 x 10 mL</b>
15 mg/mL in Water		

O-(2,3,4,5,6-Pentafluorobenzyl)hydroxylamine hydrochloride

### Working Level (Internal Standard)

<b>M-556-IS-WL-5ML-SET</b>		<b>10 x 5 mL</b>
400 µg/L in Hexane		
1,2-Dibromopropane		

### Technical Note

#### Difference between Method 556 & 556.1

AccuStandard has designed cat. no. M-556 to meet both versions of the carbonyl method(s). The primary difference between method 556 and 556.1 is that crotonaldehyde has been removed from the analyte list in the 556.1 method. If you require a formulation without the crotonaldehyde AccuStandard can custom formulate a standard to meet your exact requirements.

#### Procedural Calibration Standard

M-556 is to be used as a procedural standard for calibration of the method. As a procedural calibration standard it should be carried through the entire extraction and derivatization procedure associated with the samples. The oxime derivatives are analyzed by GC/ECD. AccuStandard's synthesis department has the capability to manufacture the actual oxime derivatives. If your lab has an application for the actual derivatives, please contact us by phone or e-mail at techservice@accustandard.com, and we can provide a quotation to meet your requirements.

### Internal Standard

<b>M-556-IS</b>		<b>1 x 1 mL</b>
<b>M-556-IS-PAK</b>	<b>SAVE</b>	<b>5 x 1 mL</b>
10 mg/mL in Hexane		
1,2-Dibromopropane		

### Technical Note

#### Working Level Internal Standard

AccuStandard has designed both a high concentration Internal standard and the working level version required as part of the procedural method. By bulk packaging the final working level standard we provide sufficient material at a reasonable cost for each test sample.

If you require larger quantities packaged in convenient Ready-to-Use disposable units contact our technical department for a quotation on the increased quantity of units required.

### Surrogate Standards

<b>M-556-SS</b>		<b>1 x 1 mL</b>
<b>M-556-SS-PAK</b>	<b>SAVE</b>	<b>5 x 1 mL</b>
20 µg/mL in AcCN		
<b>M-556-SS-100X</b>		<b>1 x 1 mL</b>
<b>M-556-SS-100X-PAK</b>	<b>SAVE</b>	<b>5 x 1 mL</b>
2.0 mg/mL in AcCN		

2',4',5'-Trifluoroacetophenone

# Aldehydes

## Method 1004 Carbonyl Compounds as DNP derivatives by HPLC

### Carbonyl Compounds as DNP deriv. by HPLC California Air Resources Board Method 1004

<b>M-1004</b>	<b>1 x 1 mL</b>
<i>At stated conc. in AcCN</i>	13 comps.
<b>M-1004-10X</b>	<b>1 x 1 mL</b>
<i>At 10 times the stated conc. in AcCN</i>	13 comps.

	Carbonyl Compound µg/mL	DNP Derivative µg/mL
Acetaldehyde	3.0	15.3
Acetone	3.0	12.3
Acrolein	3.0	12.7
Benzaldehyde	3.0	8.1
2-Butanone (MEK)	3.0	10.5
n-Butyraldehyde	3.0	10.5
Crotonaldehyde	3.0	10.7
Formaldehyde	3.0	21.0
Hexanal	3.0	8.4
Methacrolein	3.0	10.7
Propionaldehyde	3.0	12.3
m-Tolualdehyde	3.0	7.5
Valeraldehyde	3.0	9.3

<b>CAR-DNP</b>	<b>1 x 1 mL</b>
<i>At stated conc. in AcCN as DNP derivatives</i>	7 comps.
	µg/mL
Acetaldehyde	1000
Acetone	500
Acrolein	500
Benzaldehyde	500
Butyraldehyde	500
Formaldehyde	1500
Propionaldehyde	500

### Reference Gas Oil Sample

<b>RGS-001</b>	<b>1 x 1 mL</b>
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Hydrocarbon Mixture (boiling point range 250-850 °F)

## JEA Methods Japan Environmental Agency Method Standards

### Method Aldehydes as DNP Derivatives

<b>JEAM-002</b>	<b>1 x 1 mL</b>
<b>JEAM-002-PAK</b>	<b>5 x 1 mL</b>
<i>100 µg/mL each in Ethyl acetate</i>	6 comps.
	<b>SAVE</b>
Acetaldehyde-DNP	Isovaleraldehyde-DNP
Butyraldehyde-DNP	Propionaldehyde-DNP
Isobutyraldehyde-DNP	Pentanal-DNP

If you do not find the mixture you need,  
please inquire at your local Distributor for a  
very competitive prices.

# Ketones

Ketones (in 1 mL of solvent, unless otherwise noted)

KETONES	CAS NO.	QTY./CONC.	MATRIX	CAT. NO.	UNIT
Acetone	67-64-1	100 µg/mL	MeOH	APP-9-003	1 mL
		2 mg/mL	MeOH	APP-9-003-20X	1 mL
		5 mg/mL	MeOH	AS-E0284	1 mL
		10 mg/mL	Water	M-8015B/5031-01	1 mL
Acetone-DNPH	1567-89-1	0.1 mg/mL	AcCN	M-8315-R-DNPH-02	1 mL
		0.1 mg/mL	AcCN	M-8315-R2-DNPH-02	1 mL
Acetophenone	98-86-2	100 µg/mL	CH <sub>2</sub> Cl <sub>2</sub>	APP-9-004	1 mL
		2 mg/mL	CH <sub>2</sub> Cl <sub>2</sub>	APP-9-004-20X	1 mL
		5 mg/mL	MeOH	AS-E0411	1 mL
Cyclohexanone	108-94-1	1 mg/mL	MeOH	M-554-04	1 mL
Cyclohexanone-DNPH	1589-62-4	0.1 mg/mL	AcCN	M-8315-R-DNPH-07	1 mL
		500 µg/mL	AcCN	AE-00046	1 mL
		1 mg/mL	MeOH:AcCN	M-554-DNPH-04	1 mL
1,1-Dichloro-2-propanone	513-88-2	5 mg/mL	Acetone	M-551B-6	1 mL
2-Hexanone	591-78-6	100 µg/mL	MeOH	APP-9-118	1 mL
Isophorone	78-59-1	100 µg/mL	MeOH	APP-9-122	1 mL
		1 mg/mL	MeOH	AS-E0052	1 mL
Methyl ethyl ketone (MEK)	78-93-3	100 µg/mL	MeOH	APP-9-129	1 mL
		1 mg/mL	MeOH	APP-9-129-10X	1 mL
		2 mg/mL	MeOH	APP-9-129-20X	1 mL
		5 mg/mL	MeOH	AS-E0311	1 mL
		10 mg/mL	Water	M-8015B/5031-18	1 mL
		100 µg/mL	MeOH	APP-9-135	1 mL
Methyl isobutyl ketone (MIK)	108-10-1	2 mg/mL	MeOH	APP-9-135-20X	1 mL
		5 mg/mL	MeOH	AS-E0349	1 mL
		10 mg/mL	Water	M-8015B/5031-19	1 mL
		10 mg/mL	Water	M-8015B/5031-22	1 mL
2-Pentanone	107-87-9	10 mg/mL	Water	M-8015B/5031-22	1 mL
1,1,1-Trichloro-2-propanone	918-00-3	1 mg/mL	Acetone	AS-E1181	1 mL
		5 mg/mL	Acetone	M-551B-8	1 mL
2',4',5'-Trifluoroacetophenone	129322-83-4	20 µg/mL	AcCN	M-556-SS	1 mL
		2 mg/mL	AcCN	M-556-SS-100X	1 mL

## Kits for Qualitative Analysis & Identification

### Normal Ketones

**PS-411C** 15 units

2 mL each. Neat.

- (01) 2-Butanone
  - (02) 2-Pentanone
  - (03) 3-Pentanone
  - (04) 2-Hexanone
  - (05) 2-Heptanone
  - (06) 3-Heptanone
  - (07) 4-Heptanone
  - (08) 2-Octanone
  - (09) 3-Octanone
  - (10) 2-Nonanone
  - (11) 5-Nonanone
  - (12) 2-Methylcyclohexanone
  - (13) 3-Methylcyclohexanone
  - (14) 4-Methylcyclohexanone
  - (15) Ketones Mixture PS-41C
- Neat at the stated weight
- 3-Pentanone 28.4%
  - 4-Methyl-2-pentanone 14.1%
  - 4-Heptanone 28.3%
  - 2-Heptanone 29.1%

### Calibration Mixture

**PS-41C** 2 mL units

Neat at the stated weight % listed above

### Methyl Ketones

**PS-431D** 15 units

2 mL each at the stated concentrations by weight % in Acetone solvent.

- (01) 2-Propanone Neat
  - (02) 2-Butanone Neat
  - (03) 2-Pentanone Neat
  - (04) 2-Hexanone Neat
  - (05) 2-Heptanone Neat
  - (06) 2-Octanone Neat
  - (07) 2-Nonanone Neat
  - (08) 2-Decanone 10%
  - (09) 2-Undecanone 10%
  - (10) 2-Dodecanone 10%
  - (11) 2-Tridecanone 10%
  - (12) 2-Tetradecanone 10%
  - (13) 2-Pentadecanone 10%
  - (14) 2-Hexadecanone 10%
  - (15) Ketones Mixture PS-43D
- Neat at the stated weight
- 2-Propanone 15%
  - 2-Hexanone 20%
  - 2-Heptanone 25%
  - 2-Octanone 40%

### Calibration Mixture

**PS-43D** 2 mL units

Neat at the stated weight % listed above

### Branched Ketones

**PS-421D** 15 units

2 mL each. Neat.

- (01) 3-Methyl-2-butanone
  - (02) 3,3-Dimethyl-2-butanone
  - (03) 2-Methyl-3-pentanone
  - (04) 4-Methyl-2-pentanone
  - (05) 2,4-Dimethyl-3-pentanone
  - (06) 2-Methyl-3-hexanone
  - (07) 5-Methyl-2-hexanone
  - (08) 2-Methyl-3-heptanone
  - (09) 5-Methyl-3-heptanone
  - (10) 2,6-Dimethyl-4-heptanone
  - (11) Mesityl oxide
  - (12) Acetophenone
  - (13) Cyclopentanone
  - (14) Cyclohexanone
  - (15) Ketones Mixture PS-42D
- Neat at the stated weight
- 5-Methyl-2-hexanone 14.3%
  - 2-Heptanone 18.8%
  - 5-Methyl-3-heptanone 28.9%
  - 2,6-Dimethyl-4-heptanone 38.0%

### Calibration Mixture

**PS-42D** 2 mL units

Neat at the stated weight % listed above

# Ethers

Ethers (in 1 mL of solvent, unless otherwise noted)

ETHERS	CAS NO.	QTY./CONC.	MATRIX	CAT. NO.
bis(2-Chloroethyl)ether	111-44-4	mg/mL	MeOH	APP-9-027-40X
2-Chloroethylvinyl ether	110-75-8	2 mg/mL	MeOH	M-601C-10X
Diethyl ether	60-29-7	10 mg/mL	Water	M-8015B/5031-09
1,4-Dioxane	123-91-1	100 µg/mL	MeOH	APP-9-096
		1 mg/mL	MeOH	APP-9-096-10X
		10 mg/mL	MeOH	AS-E0480
		10 mg/mL	Water	M-8015B/5031-10
		0.2 mg/mL	Hexane	M-8150-08
Dinoseb methyl ether	6099-79-2	0.2 mg/mL	Hexane	M-8150-08
MIBE	1634-04-4	0.2 mg/mL	MeOH	S-078
		2 mg/mL	MeOH	S-078-10X
TAME	994-05-8	0.2 mg/mL	MeOH	S-1019

## Halo Ethers

Halo Ethers (in 1 mL of solvent, unless otherwise noted)

HALO ETHERS	CAS NO.	QTY./CONC.	MATRIX	CAT. NO.
4-Bromophenyl phenyl ether	101-55-3	1 mg/mL	Isooctane	E-001S
4-Chlorophenyl phenyl ether	7005-72-3	1 mg/mL	Isooctane	E-002S
2,4-Dibromophenyl-4-nitrophenyl ether	2671-93-4	1 mg/mL	Isooctane	E-004S
2-Chlorophenyl-4-nitrophenyl ether	209-61-4	1 mg/mL	Isooctane	E-005S
3-Chlorophenyl-4-nitrophenyl ether	2303-23-3	1 mg/mL	Isooctane	E-006S
4-Chlorophenyl-4-nitrophenyl ether	1836-74-4	1 mg/mL	Isooctane	E-007S
2,3-Dichlorophenyl-4-nitrophenyl ether	82239-20-1	1 mg/mL	Isooctane	E-008S
2,4-Dichlorophenyl-4-nitrophenyl ether	1836-75-5	1 mg/mL	Isooctane	E-009S
2,5-Dichlorophenyl-4-nitrophenyl ether	391-48-7	1 mg/mL	Isooctane	E-010S
2,6-Dichlorophenyl-4-nitrophenyl ether	2093-28-9	1 mg/mL	Isooctane	E-011S
3,5-Dichlorophenyl-4-nitrophenyl ether		1 mg/mL	Isooctane	E-012S
3,4-Dichlorophenyl-4-nitrophenyl ether	22532-80-5	1 mg/mL	Isooctane	E-013S
4-Nitrophenyl phenyl ether	620-88-2	1 mg/mL	Isooctane	E-003S
2,3,4-Trichlorophenyl-4-nitrophenyl ether		1 mg/mL	Isooctane	E-014S
2,3,5-Trichlorophenyl-4-nitrophenyl ether		1 mg/mL	Isooctane	E-015S
2,3,6-Trichlorophenyl-4-nitrophenyl ether		1 mg/mL	Isooctane	E-016S
2,4,5-Trichlorophenyl-4-nitrophenyl ether	22532-68-9	1 mg/mL	Isooctane	E-017S
2,4,6-Trichlorophenyl-4-nitrophenyl ether	1836-77-7	1 mg/mL	Isooctane	E-018S
3,4,5-Trichlorophenyl-4-nitrophenyl ether		1 mg/mL	Isooctane	E-019S
2,4-Dichlorophenyl-3-methyl-4-nitrophenyl ether <b>NEW</b>	42488-57-3	1 mg/mL	Isooctane	E-020S

### Method 8110 Haloethers by GC/HECD

**M-611-10X**

2.0 mg/mL each in MeOH

**1 x 1 mL**

5 comps.

 4-Bromophenyl phenyl ether  
 bis(2-Chloroethoxy)methane  
 bis(2-Chloroethyl)ether

 bis(2-Chloroisopropyl)ether  
 4-Chlorophenyl phenyl ether

### Method 8111 Haloethers Mix: non-RCRA Analytes

**M-8111-X1**

1.0 mg/mL each in Isooctane

**1 x 1 mL**

19 comps.

 4-Bromophenyl phenyl ether  
 2-Chlorophenyl-4-nitrophenyl ether  
 3-Chlorophenyl-4-nitrophenyl ether  
 4-Chlorophenyl-4-nitrophenyl ether  
 2,4-Dibromophenyl-4-nitrophenyl ether  
 2,4-Dichlorophenyl-3-methyl-4-nitrophenyl ether  
 2,6-Dichlorophenyl-4-nitrophenyl ether  
 3,5-Dichlorophenyl-4-nitrophenyl ether  
 2,5-Dichlorophenyl-4-nitrophenyl ether  
 2,4-Dichlorophenyl-4-nitrophenyl ether  
 2,3-Dichlorophenyl-4-nitrophenyl ether  
 3,4-Dichlorophenyl-4-nitrophenyl ether  
 4-Nitrophenyl phenyl ether  
 2,4,6-Trichlorophenyl-4-nitrophenyl ether  
 2,3,6-Trichlorophenyl-4-nitrophenyl ether  
 2,3,5-Trichlorophenyl-4-nitrophenyl ether  
 2,4,5-Trichlorophenyl-4-nitrophenyl ether  
 3,4,5-Trichlorophenyl-4-nitrophenyl ether  
 2,3,4-Trichlorophenyl-4-nitrophenyl ether

### Haloethers Mix: RCRA analytes

**M-8111**
**M-8111-PAK**

1.0 mg/mL each in Isooctane

 bis(2-chloroethoxy)methane  
 bis(2-Chloroethyl)ether

 bis(2-Chloroisopropyl)ether  
 4-Chlorophenyl phenyl ether

**SAVE**  
**5 x 1 mL**
**1 x 1 mL**  
**5 x 1 mL**  
 4 comps.

### Internal Standard

**M-8111-IS-20X**
**M-8111-IS-20X-PAK**

1000 µg/mL in Acetone

4,4'-Dibromobiphenyl

**SAVE**  
**5 x 1 mL**
**1 x 1 mL**  
**5 x 1 mL**

### Surrogate Standard

**M-8111-SS-50X**

1000 µg/mL each in Acetone

2,4-Dichlorophenyl phenyl ether

2,3,4-Trichlorophenyl phenyl ether

**1 x 1 mL**  
**2 comps.**

# Haloacetic Acids

Haloacetic Acids (in 1 mL of solvent, unless otherwise noted)

HALOACETIC ACIDS	CAS NO.	QTY./CONC.	MATRIX	CAT. NO.
2,4-Dichlorophenylacetic acid	19719-28-9	2 µg/mL	Acetone	M-1618-SA
2,4-Dichlorophenylacetic methyl ester		0.1 mg/mL	MtBE	M-515-SS
		5 mg/mL	MtBE	M-515-SS-50X
Methyl bromoacetate	96-32-2	200 µg/mL	MeOH	M-552.1-02
Methyl bromochloroacetate	20428-74-4	200 µg/mL	MeOH	M-552.1-03
Methyl chloroacetate	96-34-4	300 µg/mL	MeOH	M-552.1-04
Methyl dibromoacetate	6482-26-4	100 µg/mL	MeOH	M-552.1-05
Methyl dichloroacetate	116-54-1	300 µg/mL	MeOH	M-552.1-06
Methyl bromoacetate	96-32-2	40 µg/mL	MtBE	M-552.2-02
Methyl bromochloroacetate	20428-74-4	40 µg/mL	MtBE	M-552.2-03
Methyl bromodichloroacetate		40 µg/mL	MtBE	M-552.2-04
Methyl chloroacetate	96-34-4	60 µg/mL	MtBE	M-552.2-05
Methyl chlorodibromoacetate	20428-75-5	100 µg/mL	MtBE	M-552.2-06
Methyl dibromoacetate	6482-26-4	20 µg/mL	MtBE	M-552.2-07
Methyl dichloroacetate	116-54-1	60 µg/mL	MtBE	M-552.2-08
Methyl tribromoacetate	482979	200 µg/mL	MtBE	M-552.2-09
Methyl trichloroacetate	598-99-2	20 µg/mL	MtBE	M-552.2-10
		100 µg/mL	MeOH	M-552.1-07
Monobromoacetic acid	79-08-3	40 µg/mL	MtBE	M-552.2A-07
Monochloroacetic acid	79-11-8	60 µg/mL	MtBE	M-552.2A-08
Methyl bromochloroacetate	20428-74-4	1 mg/mL	MtBE	M-552-R-03
Methyl chloroacetate	96-34-4	1 mg/mL	MtBE	M-552-R-04
Tribromoacetic acid	75-96-7	200 µg/mL	MtBE	M-552.2A-09
Trichloroacetic acid	76-03-9	20 µg/mL	MtBE	M-552.2A-10
		1 mg/mL	MtBE	M-552A-4

## Method 552 Haloacetic Acids by ECD

### Methyl Derivatives

**M-552-R-SET** set of 8 x 1 mL  
Each at 1.0 mg/mL in MtBE 8 analytes listed below

**M-552-R (MIX)** 1 x 1 mL  
1.0 mg/mL each in MtBE Mix contains 8 analytes listed below

2,4-Dichloroanisole (01)	Methyl dibromoacetate (05)
Methyl bromoacetate (02)	Methyl dichloroacetate (06)
Methyl bromochloroacetate (03)	Methyl trichloroacetate (07)
Methyl chloroacetate (04)	2,4,6-Trichloroanisole (08)

### Underivatized Analytes

**M-552A-R-SET** set of 8 x 1 mL  
Each at 1.0 mg/mL in MtBE

**M-552A-R (MIX)** 1 x 1 mL  
1.0 mg/mL each in MtBE Mix contains 8 analytes listed below

Bromoacetic acid (01)	Dichloroacetic acid (05)
Bromochloroacetic acid (02)	2,4-Dichlorophenol (06)
Chloroacetic acid (03)	Trichloroacetic acid (07)
Dibromoacetic acid (04)	2,4,6-Trichlorophenol (08)

### Internal Standards

**APP-9-208-10X** 1 x 1 mL  
**APP-9-208-10X-PAK** SAVE 5 x 1 mL  
1.0 mg/mL in MeOH

1,2,3-Trichloropropane

**M-552-IS** 1 x 1 mL  
**M-552-IS-PAK** SAVE 5 x 1 mL  
1.0 mg/mL in MeOH

1,2-Dibromopropane

### Surrogate Standards as Acids & Methyl esters

**P-242S-10X** 1 x 1 mL  
**P-242S-10X-PAK** SAVE 5 x 1 mL  
1.0 mg/mL in MeOH

3,5-Dichlorobenzoic acid

**P-247S-10X** 1 x 1 mL  
**P-247S-10X-PAK** SAVE 5 x 1 mL  
1.0 mg/mL in MeOH

3,5-Dichlorobenzoic acid methyl ester

**M-552-SS** 1 x 1 mL  
**M-552-SS-PAK** SAVE 5 x 1 mL  
20 mg/mL in MtBE

2,3-Dibromopropionic acid

**M-552-SS-ME** 1 x 1 mL  
**M-552-SS-ME-PAK** SAVE 5 x 1 mL  
20 mg/mL in MtBE

2,3-Dibromopropionic acid methyl ester

# Haloacetic Acids

## Method 552.1 Haloacetic Acids by ECD

### Methyl Derivatives

**M-552.1-SET** set of 7 x 1 mL  
Each at stated conc. in MeOH  
7 analytes listed below

M-552.1	1 x 1 mL
At stated conc. in MeOH	Mix contains
	7 analytes listed below
	µg/mL
Dalapon ME (01)	200
Methyl bromoacetate (02)	200
Methyl bromochloroacetate (03)	200
Methyl chloroacetate (04)	300
Methyl dibromoacetate (05)	100
Methyl dichloroacetate (06)	300
Methyl trichloroacetate (07)	100

### Underivatized Analytes

**M-552.1A-SET** set of 7 x 1 mL  
Each at stated conc. in MeOH  
7 analytes listed below

M-552.1A	1 x 1 mL
At stated conc. in MeOH	Mix contains
	7 analytes listed below
	µg/mL
Dalapon (01)	200
Bromoacetic acid (02)	200
Bromochloroacetic acid (03)	200
Chloroacetic acid (04)	300
Dibromoacetic acid (05)	100
Dichloroacetic acid (06)	300
Trichloroacetic acid (07)	100

### Internal Standard

**M-552.1-IS** 1 x 1 mL  
**M-552.1-IS-PAK** SAVE 5 x 1 mL  
1.0 mg/mL in MtBE  
1,2,3-Trichloropropane

### Surrogate Standards

**M-552.1-SS** 1 x 1 mL  
**M-552.1-SS-PAK** SAVE 5 x 1 mL  
1.0 mg/mL in MtBE  
2-Bromopropanoic acid

**M-552.1-SS-ME** 1 x 1 mL  
**M-552.1-SS-ME-PAK** SAVE 5 x 1 mL  
1.0 mg/mL in MtBE  
Methyl 2-bromopropionate

## Method 552.2 Determination of Haloacetic Acids & Dalapon in Drinking Water by L-L extraction, Derivatization & GC by ECD

A convenient set of 10 individual ampules for Method 552.2, each containing a single analyte or its methyl derivative. Formulated both the acids & their methyl derivatives with and without the surrogate.

### Methyl Derivatives

#### Haloacetic Acid Methyl Derivatives without Surrogates

**M-552.2-SET** set of 10 x 1 mL  
(1 each of individual analytes 1-10)

M-552.2-R1	1 x 1 mL
At stated conc. in MtBE	10 comps.
	µg/mL
Dalapon methyl ester (01)	40
Methyl bromoacetate (02)	40
Methyl bromochloroacetate (03)	40
Methyl bromodichloroacetate (04)	40
Methyl chloroacetate (05)	60
Methyl chlorodibromoacetate (06)	100
Methyl dibromoacetate (07)	20
Methyl dichloroacetate (08)	60
Methyl tribromoacetate (09)	200
Methyl trichloroacetate (10)	20

#### Haloacetic Acid Methyl Derivatives with Surrogate (Methyl-2,3-dibromopropionate)

M-552.2	1 x 1 mL
At stated conc. in MtBE	11 comps.
	µg/mL
Dalapon methyl ester	40
Methyl bromoacetate	40
Methyl bromochloroacetate	40
Methyl bromodichloroacetate	40
Methyl chloroacetate	60
Methyl chlorodibromoacetate	100
Methyl dibromoacetate	20
Methyl dichloroacetate	60
Methyl tribromoacetate	200
Methyl trichloroacetate	20
Methyl-2,3-dibromopropionate (Surrogate)	100

#### Surrogate Standard - Haloacetic Acid Methyl Derivative

**M-552.2-SS-ME** 1 x 1 mL  
1000 µg/mL in MtBE  
Methyl 2,3-dibromopropionate

#### Laboratory Performance Check Solution

M-552.2-LPC-WL-25ML	1 x 25 mL
M-552.2-LPC-WL-50ML	1 x 50 mL
At stated conc. in MtBE	4 comps.
	µg/mL
Methyl bromochloroacetate	0.004
Methyl chloroacetate	0.006
Methyl chlorodibromoacetate	0.010
Methyl-2,3-dibromopropionate	0.010

### Haloacetic Acids

#### Haloacetic Acid Mix without Surrogate

**M-552.2A-SET** set of 10 x 1 mL  
(1 each of individual analytes 1-10)

M-552.2A-R1	1 x 1 mL
At stated conc. in MtBE	10 comps.
	µg/mL
Dalapon acid (04)	40
Monobromoacetic acid (07)	40
Bromochloroacetic acid (01)	40
Bromodichloroacetic acid (02)	40
Monochloroacetic acid (08)	60
Chlorodibromoacetic acid (03)	100
Dibromoacetic acid (05)	20
Dichloroacetic acid (06)	60
Tribromoacetic acid (09)	200
Trichloroacetic acid (10)	20

#### Haloacetic Acid Mix with Surrogate (2,3-Dibromopropionic acid)

M-552.2A	1 x 1 mL
At stated conc. in MtBE	11 comps.
	µg/mL
Dalapon acid	40
Monobromoacetic acid	40
Bromochloroacetic acid	40
Bromodichloroacetic acid	40
Monochloroacetic acid	60
Chlorodibromoacetic acid	100
Dibromoacetic acid	20
Dichloroacetic acid	60
Tribromoacetic acid	200
Trichloroacetic acid	20
2,3-Dibromopropionic acid (Surrogate)	100

#### Surrogate Standard - Haloacetic Acid

**M-552.2-SS** 1 x 1 mL  
1000 µg/mL in MtBE  
2,3-Dibromopropionic acid

### Internal Standard

**M-552.2-IS** 1 x 1 mL  
1000 µg/mL in MtBE  
1,2,3-Trichloropropane

If you do not find the mixture you need, please inquire at your local Distributor for a very competitive prices.



100-51-6:109	6099-79-2:114	20X:113	M-552-R:115	M-552.2A-R1:116
101-55-3:114	620-88-2:114	APP-9-135:113	M-552-R-03:115	M-552.2A-
1019-57-4:110	64-17-5:109	APP-9-135-	M-552-R-04:115	SET:116
107-02-8:110	6482-26-4:115	20X:113	M-552-R-	M-552A-4:115
107-18-6:109	66-25-1:110	APP-9-208-	SET:115	M-552A-R:115
107-19-7:109	67-56-1:109	10X:115	M-552-SS:115	M-552A-R-
107-21-1:109	67-63-0:109	APP-9-208-10X-	M-552-SS-	SET:115
107-87-9:113	67-64-1:113	PAK:115	ME:115	M-554-01:110
108-10-1:113	7005-72-3:114	AS-E0002:110	M-552-SS-ME-	M-554-02:110
108-94-1:113	71-23-8:109	AS-E0052:113	PAK:115	M-554-03:110
1081-15-8:110	71-36-3:109	AS-E0284:113	M-552-SS-	M-554-04:113
110-62-3:110	725-00-8:110	AS-E0311:113	PAK:115	M-554-05:110
110-75-8:114	75-07-0:110	AS-E0326:109	M-552.1:116	M-554-06:110
111-44-4:114	75-65-0:109	AS-E0349:113	M-552.1-02:115	M-554-07:110
111-71-7:110	75-96-7:115	AS-E0411:113	M-552.1-03:115	M-554-08:110
112-31-2:110	76-03-9:115	AS-E0475:109	M-552.1-05:115	M-554-09:110
1157-84-2:110	78-59-1:113	AS-E0479:110	M-552.1-06:115	M-554-10:110
116-54-1:115	78-83-1:109	AS-E0480:114	M-552.1-07:115	M-554-11:110
123-38-6:110	78-93-3:113	AS-E0543:109	M-552.1-IS:116	M-554-12:110
123-63-7:110	79-08-3:115	AS-E0659:109	M-552.1-IS-	M-554-DNPH:111
123-72-8:110	79-11-8:115	AS-E0928:109	PAK:116	M-554-DNPH-
123-73-9:110	82239-20-1:114	AS-E1181:113	M-552.1-SET:116	02:110
123-91-1:114	888-54-0:110	CAR-DNPH:112	M-552.1-SS:116	M-554-DNPH-
124-13-0:110	918-00-3:113	E-001S:114	M-552.1-SS-	03:110
124-19-6:110	96-23-1:109	E-002S:114	ME:116	M-554-DNPH-
129322-83-4:113	96-32-2:115	E-003S:114	M-552.1-SS-ME-	04:113
152477-96-8:110	96-34-4:115	E-004S:114	PAK:116	M-554-DNPH-
1527-96-4:110	98-86-2:113	E-005S:114	M-552.1-SS-	05:110
1527-97-5:110	994-05-8:114	E-006S:114	PAK:116	M-554-DNPH-
1527-98-6:110	AE-00043:110	E-007S:114	M-552.1A:116	06:110
1567-89-1:113	AE-00044:110	E-008S:114	M-552.1A-	M-554-DNPH-
1589-62-4:113	AE-00046:110,	E-009S:114	SET:116	07:110
1634-04-4:114	113	E-010S:114	M-552.2:116	M-554-DNPH-
1773-44-0:110	APP-9-003:113	E-011S:114	M-552.2-02:115	08:110
1836-74-4:114	APP-9-003-	E-012S:114	M-552.2-03:115	M-554-DNPH-
1836-75-5:114	20X:113	E-013S:114	M-552.2-04:115	09:110
1836-77-7:114	APP-9-004:113	E-014S:114	M-552.2-05:115	M-554-DNPH-
19719-28-9:115	APP-9-004-	E-015S:114	M-552.2-06:115	10:110
20428-74-4:115	20X:113	E-016S:114	M-552.2-07:115	M-554-DNPH-
20428-75-5:115	APP-9-007:110	E-017S:114	M-552.2-08:115	11:110
2057-84-3:110	APP-9-007-	E-018S:114	M-552.2-09:115	M-554-DNPH-
209-61-4:114	10X:110	E-019S:114	M-552.2-10:115	12:110
2093-28-9:114	APP-9-021:109	JEAM-002:112	M-552.2-IS:116	M-554-DNPH-
22532-68-9:114	APP-9-021-	JEAM-002-	M-552.2-LPC-	SET:111
22532-80-5:114	50X:109	PAK:112	WL-25ML:116	M-554-R1:111
2256-01-1:110	APP-9-027-	M-1004:112	M-552.2-LPC-	M-556:111
2303-23-3:114	40X:114	M-1004-10X:112	WL-50ML:116	M-556-DER-
25322-68-3:109	APP-9-096:114	M-1618-SA:115	M-552.2-R1:116	10ML:111
2571-00-8:110	APP-9-096-	M-1673:109	M-552.2-SET:116	M-556-DER-
2671-93-4:114	10X:114	M-515-SS:115	M-552.2-SS:116	10ML-PAK:111
2880-05-9:110	APP-9-118:113	M-515-SS-	M-552.2-SS-	M-556-DER-
391-48-7:114	APP-9-120:109	50X:115	ME:116	SET:111
50-00-0:110	APP-9-122:113	M-551B-6:113	M-552.2A:116	M-556-IS:111
513-88-2:113	APP-9-129:113	M-551B-8:113	M-552.2A-07:115	M-556-IS-
591-78-6:113	APP-9-129-	M-552-IS:115	M-552.2A-08:115	PAK:111
598-99-2:115	10X:113	M-552-IS-	M-552.2A-09:115	M-556-IS-WL-
60-29-7:114	APP-9-129-	PAK:115	M-552.2A-10:115	5ML-SET:111

M-556-PAK:111	M-8315-01:110	PS-411C:113
M-556-SS:111, 113	M-8315-02:110	PS-41C:113
M-556-SS- 100X:111, 113	M-8315-R-DNPH- 01:110	PS-421D:113
M-556-SS-100X- PAK:111	M-8315-R-DNPH- 02:113	PS-42D:113
M-556-SS- PAK:111	M-8315-R-DNPH- 03:110	PS-431D:113
M-601C-10X:114	M-8315-R-DNPH- 04:110	PS-43D:113
M-611-10X:114	M-8315-R-DNPH- 05:110	PS-450E:110
M-8015B/5031- 01:113	M-8315-R-DNPH- 06:110	PS-450E:110
M-8015B/5031- 03:110	M-8315-R-DNPH- 07:113	RGS-001:112
M-8015B/5031- 05:109	M-8315-R-DNPH- 08:110	S-078:114
M-8015B/5031- 06:109	M-8315-R-DNPH- 09:110	S-078-10X:114
M-8015B/5031- 07:109	M-8315-R-DNPH- 10:110	S-1019:114
M-8015B/5031- 08:110	M-8315-R-DNPH- 11:110	S-1275-1-03:110
M-8015B/5031- 09:114	M-8315-R-DNPH- 12:110	S-410:109
M-8015B/5031- 10:114	M-8315-R-DNPH- 13:110	
M-8015B/5031- 11:109	M-8315-R-DNPH- 14:110	
M-8015B/5031- 13:109	M-8315-R-DNPH- 15:110	
M-8015B/5031- 15:109	M-8315-R-DNPH- 16:110	
M-8015B/5031- 16:109	M-8315-R-DNPH- 17:110	
M-8015B/5031- 17:109	M-8315-R-DNPH- 18:110	
M-8015B/5031- 18:113	M-8315-R-DNPH- 19:110	
M-8015B/5031- 19:113	M-8315-R-DNPH- 20:110	
M-8015B/5031- 21:110	M-8315-R2- DNPH-02:113	
M-8015B/5031- 22:113	P-242S-10X:115	
M-8015B/5031- 24:109	P-242S-10X- PAK:115	
M-8111:114	P-247S-10X:115	
M-8111-IS- 20X:114	P-247S-10X- PAK:115	
M-8111-IS-20X- PAK:114	PS-111C:109	
M-8111-PAK:114	PS-11C:109	
M-8111-SS- 50X:114	PS-121C:109	
M-8111-X1:114	PS-121CX:109	
M-8150-08:114	PS-12C:109	
	PS-131C:109	
	PS-13C:109	