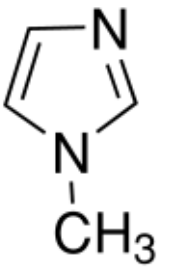
3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

# Product Specification

Product Name:
1-Methylimidazole - ReagentPlus®, 99%

| | |
|---|---|
| **Product Number:** | **M50834** |
| CAS Number: | 616-47-7 |
| MDL: | MFCD00005292 |
| Formula: | C4H6N2 |
| Formula Weight: | 82.10 g/mol |



| TEST | Specification |
|---|---|
| Appearance (Color) | Colorless to Yellow |
| Appearance (Form) | Liquid |
| Infrared spectrum | Conforms to Structure |
| Color Test | ≤ 400 APHA |
| Purity (GC) | ≥ 98.5 % |

Specification: PRD.0.ZQ5.10000032193

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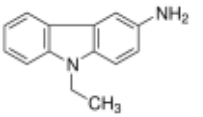
# Product Specification

Product Name:
3-Amino-9-ethylcarbazole - ≥95% (HPLC), powder

| | |
|---|---|
| **Product Number:** | **A5754** |
| CAS Number: | 132-32-1 |
| MDL: | MFCD00004964 |
| Formula: | C14H14N2 |
| Formula Weight: | 210.27 g/mol |
| Storage Temperature: | 2 - 8 °C |




| TEST | Specification |
|---|---|
| Appearance (Color) | Faint Beige to Dark Beige to Dark Brown |
| Appearance (Form) | Powder |
| Solubility (Color) | Faint Yellow to Dark Yellow to Dark Brown |
| Solubility (Turbidity)<br>50 mg/mL, EtOH:HOAc (2:1) | Clear to Hazy |
| Solvent Content (by NMR) | ≤ 3 % |
| 1H NMR Spectrum | Conforms to Structure |
| Carbon | 72.0 - 88.0 % |
| Nitrogen | 12.0 - 16.6 % |
| Purity (HPLC) | ≥ 95 % |
| Recommended Retest Period<br>2 years | ---------- |

Specification: PRD.4.ZQ5.10000008215

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# Product Specification

Product Name:
Deoxyribonucleic acid sodium salt from calf thymus – Type I, fibers

**Product Number:** **D1501**
CAS Number: 73049-39-5
MDL: MFCD00130922

Storage Temperature: 2 - 8 °C

| TEST | Specification |
|---|---|
| Appearance (Color) | White |
| Appearance (Form) | Fibers |
| Solubility (Color) | Colorless to Faint Yellow |
| Solubility (Turbidity)<br>2 mg/ml in H2O | Clear to Hazy |
| Ratio 260/280nm | ≥ 1.8 |
| A260 units/mg solid<br>One unit will yield an A260 of 1.0 in 1.0 ml of 15 mM NaCl and 1.5 mM Sodium Citrate, pH 7.0 (1 cm light path). One mg of DNA is equivalent to approx. 20 A260 units. | ≥ 16.0 |
| Sodium (Na) | 6 - 13 % |
| Phosphorus (P) | 5 - 9 % |
| % Protein (Lowry) | ≤ 10 |
| Suitability<br>Tested and found suitable as a substrate for DNAse | Suitable |
| Recommended Retest Period<br>4 years | ---------- |

Specification: PRD.0.ZQ5.10000083700

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# Product Specification

Product Name:
Anti-Pig IgG (whole molecule)-FITC antibody produced in rabbit - affinity isolated antibody, buffered aqueous solution

**Product Number:** **F1638**

| TEST | Specification |
|---|---|
| Appearance (Form) | Liquid |
| Appearance (Turbidity) | Clear |
| Appearance (Color) | Yellow |
| IgG Concentration (OD 280nm) | 3.0 - 6.5 mg/ml |
| F/P Molar Ratio | 2.5 - 6.5 |
| IF Cells | Pig Peiferal Blood Lymphocytes |
| IF-Titer | 1:32-1:64 |
| Recommended Retest Period<br>3 Years | ---------- |

Specification: PRE.0.ZQ5.10000014694

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# Specification

## 1.11962.0000 Azomethine H GR for analysis (reagent for the determination of boron)

| | Specification | |
|---|---|---|
| Identity (IR-spectrum) | conforms | |
| Spec. Absorptivity A 1%/1cm (236 nm; 0.05 %; 1 cm; buffer solution pH 5.1) | ≥ 1200 | |
| Loss on Drying (105 °C) | ≤ 2.0 | % |
| Suitability for photometric (determination of boron) | conforms | |

Dr. Michael Memmel
Responsible laboratory manager quality control

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# Product Specification

Product Name:
Phosphate buffered saline – powder, pH 7.4, for preparing 1 L solutions

**Product Number:** **P3813**

MDL: MFCD00131855

| TEST | Specification |
|---|---|
| Weight in pouch (Grams) | 9.07 - 10.00 |
| Appearance (Color) | White |
| Appearance | Powder |
| pH | 7.2 - 7.6 |
| Dissolution Time | ≤ 5 min |
| Note | ---------- |

One pouch, when dissolved in one liter of distilled or deionized water, will yield 0.01 M phosphate buffered saline (0.138 M NaCl; 0.0027 M KCl), pH 7.4. Dissolution time and pH test results are from one pouch in 1L of distilled or deionized water.

Specification: PRD.5.ZQ5.10000006534

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# Specification

## 1.02066.0000 Calcium carbonate precipitated for analysis EMSURE® Reag. Ph Eur

| | Spec. Values | |
|---|---|---|
| Assay (complexometric; calculated on dried substance) | 98.5 - 100.5 | % |
| Identity | passes test | |
| Substances insoluble in acetic acid | ≤ 0.2 | % |
| Substances insoluble in hydrochloric acid | ≤ 0.005 | % |
| Chloride (Cl) | ≤ 0.005 | % |
| Sulfate ($SO_4$) | ≤ 0.03 | % |
| Total nitrogen (N) | ≤ 0.001 | % |
| Al (Aluminium) | ≤ 0.005 | % |
| As (Arsenic) | ≤ 0.0004 | % |
| Ba (Barium) | passes test | |
| Cu (Copper) | ≤ 0.0005 | % |
| Fe (Iron) | ≤ 0.001 | % |
| K (Potassium) | ≤ 0.005 | % |
| Mg (Magnesium) | ≤ 0.02 | % |
| Na (Sodium) | ≤ 0.2 | % |
| Pb (Lead) | ≤ 0.0005 | % |
| Sr (Strontium) | ≤ 0.1 | % |
| Magnesium and alkali metals | ≤ 1.5 | % |
| Heavy metals (as Pb) | ≤ 0.002 | % |
| Loss on drying (200 °C) | ≤ 1.0 | % |
| Particle size (d 50) | about 14 µm | |

Corresponds to Reag. Ph Eur

Kristin Haufschildt
Responsible laboratory manager quality control

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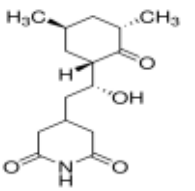
# Product Specification

Product Name:
Cycloheximide – from microbial, ≥94% (TLC)

| | |
|---|---|
| **Product Number:** | **C7698** |
| CAS Number: | 66-81-9 |
| MDL: | MFCD00082346 |
| Formula: | C15H23NO4 |
| Formula Weight: | 281.35 g/mol |
| Storage Temperature: | 2 - 8 °C |




| TEST | Specification |
|---|---|
| Appearance (Color) | White to Off White |
| Appearance (Form) | Powder |
| Infrared spectrum | Conforms to Structure |
| Carbon | 63.5 - 64.5 % |
| Nitrogen | 4.7 - 5.3 % |
| Purity (TLC) | ≥ 94 % |
| Solubility (Color) | Colorless to Light Yellow |
| Solubility (Turbidity) | Clear to Hazy |
| 50 mg/mL, EtOH | |
| Recommended Retest Period | ---------- |
| 5 Years | |

Specification: PRD.1.ZQ5.10000035606

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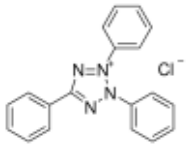
# Product Specification

Product Name:
2,3,5-Triphenyltetrazolium chloride - ≥98.0% (HPLC)

**Product Number:** **T8877**
CAS Number: 298-96-4

Formula: C19H15N4.Cl
Formula Weight: 334.81 AMU



| TEST | Specification |
|---|---|
| Appearance (Color) | White to Yellow |
| Appearance (Form) | Powder |
| Purity (HPLC) | ≥ 98.0 % |
| Solubility (Color) | Faint Yellow to Yellow |
| Solubility (Turbidity) | Clear to Slightly Hazy |
| 50 mg/ml in Water | |
| Carbon Content | |
| 68.16 % (Theory) | |
| Nitrogen Content | |
| 16.74 % (Theory) | |
| Infrared Spectrum | Conforms to Structure |

Specification: PRE.0.ZQ5.10000021520

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# Product Specification

Product Name:
Anti-Guinea Pig IgG (whole molecule)–Peroxidase antibody produced in goat – affinity isolated antibody, buffered aqueous solution

**Product Number:** **A7289**

MDL: MFCD00162368

| TEST | Specification |
|---|---|
| Appearance (Turbidity) | Clear |
| Appearance (Color) | Colorless to Light Brown |
| Appearance (Form) | Liquid |
| Protein Content | 0.5 - 4.0 mg/ml |
| Conjugate concentration prior to the addition of BSA | |
| Direct ELISA Titer-Guinea Pig IgG | 10000 - 30000 |
| 1:10,000 - 1:30,000 working dilution versus 5 µg/ml guinea pig IgG. | |

Specification: PRD.1.ZQ5.10000078299

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# Product Specification

Product Name:
Gentamicin solution - 50 mg/mL in deionized water, liquid, 0.1 µm filtered, BioReagent, suitable for cell culture

**Product Number:** **G1397**

Storage Temperature: 2 - 8 °C

| TEST | Specification |
|---|---|
| Appearance (Form) | Liquid |
| Appearance (Turbidity) | Clear |
| Appearance (Color) | Colorless to Light Yellow |
| Osmolality<br>mOs/kg | |
| Potency Gentamycin | 50 - 60 mg/ml |
| Endotoxin Level at 1ml/L | ≤ 0.5 EU/ml |
| Cell Line | Hep-2 Human Cells |
| Cell Culture Test<br>percent of control | ≥ 50 % |
| Expiration Date Period<br>24 Months | ---------- |

Specification: PRE.4.ZQ5.10000014806

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# Specification

## 1.09293.0000 KOVÁCS Indole reagent acc. ISO and FDA-BAM

Growth promotion test in accordance with the current version of DIN EN ISO 11133.

| | Specification |
|---|---|
| Indole formation (Escherichia coli ATCC 8739 (WDCM 00012)) | + |
| Indole formation (Escherichia coli ATCC 25922 (WDCM 00013)) | + |
| Indole formation (Escherichia coli ATCC 11775 (WDCM 00090)) | + |
| Indole formation (Escherichia coli DSM19683 (WDCM00179)) | + |
| Indole formation (Enterobacter aerogenes ATCC 13048) | - |
| Indole formation (Citrobacter freundii ATCC 43864 (WDCM 00006)) | - |
| Indole formation (Salmonella typhimurium ATCC 14028 (WDCM 00031)) | - |
| Indole formation (Salmonella enteritidis ATCC 13076 (WDCM 00030)) | - |

Tested in DEV-Tryptophan broth art. no. 1.10694 (after incubation for 24 h ± 3 h at 34 °C to 38 °C, aerobic).

Positive reaction: Formation of a red ring (surface layer) within 3 minutes.

Negative reaction: Yellow/brown ring (surface layer) within 3 minutes.

Dr. Lukas Mechler
Responsible laboratory manager quality control

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# Specification

## 1.03979.0000 Meat extract dry, granulated, for microbiology

| | Specification | |
|---|---|---|
| Appearance | Lightly brownishyellow granulate | |
| pH-value (5 %; water) | 6.0 - 7.5 | |
| Total nitrogen (N) (Kjeldahl) | 11.5 - 12.5 | % |
| Sulfated ash (800 °C) | ≤ 18.0 | % |
| Loss on Drying (105°C) | ≤ 6.0 | % |
| Amino nitrogen (as N) | 3.5 - 4.5 | % |
| Nitrite ($NO_2$) | passes test | |
| Suitability for microbiology | passes test | |
| Identity (NIR) | passes test | |

Dr. Till Winzer
Responsible laboratory manager quality control

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# Product Specification

Product Name:
Nicotinamide adenine dinucleotide free acid - for biochemistry NAD

**Product Number:** **1.24542**
CAS Number: 53-84-9

Formula: C21H27N7O14P2
Formula Weight: 663,43 g/mol

| TEST | Specification |
|---|---|
| Assay<br>(beta-NAD, enzymatically with ADH; calc. on anhydrous substance) | ≥ 95 % |
| Assay<br>(Spectrophotometrically) | ≥ 95.0 % |
| PH of Solution (PH)<br>(10 g/l, Water) | 2.5 - 3.0 |
| Water | ≤ 7.0 % |
| Infrared Spectrum | Passes Test |
| Absorption Max<br>(Buffer ph 7.0) | 259 - 261 nm |
| Appearance<br>(White to Almost White, Fine Powder. Eventually Slightly Yellowish.) | Passes Test |
| Miscellaneous Assay<br>Spec. Absorptivity A 1%/1cm (0.01 g/l; Buffer ph 7.0; Calc. on Anhydrous Substance) | 255 - 270 |

Specification: PRE.0.ZQ5.10000025080

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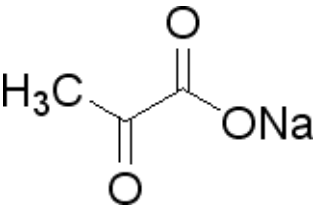
# Product Specification

Product Name:
Sodium pyruvate – powder, BioReagent, suitable for cell culture, suitable for insect cell culture, ≥99%

| | |
|---|---|
| **Product Number:** | **P5280** |
| CAS Number: | 113-24-6 |
| MDL: | MFCD00002586 |
| Formula: | C3H3NaO3 |
| Formula Weight: | 110.04 g/mol |
| Storage Temperature: | 2 - 8 °C |




| TEST | Specification |
|---|---|
| Appearance (Color) | White to Faint Yellow |
| Appearance (Form) | Powder |
| Solubility (Color) | Colorless to Faint Yellow |
| Solubility (Turbidity) | Clear |
| 100 mg/mL, H2O | |
| Proton NMR spectrum | Conforms to Structure |
| Heavy Metal | < = 20 ppm |
| As Lead | |
| Titration with HClO4 | ≥ 99 % |
| Cell Culture Test | Pass |
| Insect Cell Test | Pass |
| Recommended Retest Period | ---------- |
| 3 Years | |

Specification: PRD.0.ZQ5.10000031197

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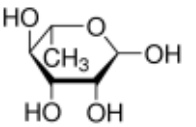
# Product Specification

Product Name:
L-Rhamnose - natural sourced, 99%, FG

**Product Number:** **W373011**
CAS Number: 10030-85-0

Formula: C6H12O5 · H2O
Formula Weight: 182.17 g/mol




| TEST | Specification |
|---|---|
| Appearance (Color) | White |
| Appearance (Form) | Crystals or Crystals with Chunks |
| Melting Point | |
| Specification: Report Results | |
| Infrared spectrum | Conforms to Structure |
| Purity (GC) | ≥ 98.5 % |
| Optical Rotation | |
| C= 0.7% ETOH | |
| Specification: Report Result | |
| Arsenic (As) | ≤ 3 ppm |
| Cadmium (Cd) | ≤ 1 ppm |
| Mercury (Hg) | ≤ 1 ppm |
| Lead (Pb) | ≤ 10 ppm |
| Expiration Date Period | ---------- |
| 5 Years | |

Specification: PRD.7.ZQ5.10000034037

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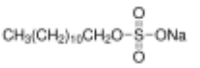
# Product Specification

Product Name:
Sodium dodecyl sulfate – 92.5–100.5% based on total alkyl sulfate content basis

| | |
|---|---|
| **Product Number:** | **L5750** |
| CAS Number: | 151-21-3 |
| MDL: | MFCD00036175 |
| Formula: | C12H25O4S.Na |
| Formula Weight: | 288.38 g/mol |



| TEST | Specification |
|---|---|
| Appearance (Color) | White to Off White |
| Appearance (Form) | Powder |
| Solubility (Color) | Colorless to Faint Yellow |
| Solubility (Turbidity) | Clear to Slightly Hazy |
| 200 mg/mL, H2O | |
| Water (by Karl Fischer) | ≤ 3 % |
| Sodium (Na) | 7.6 - 8.3 % |
| as is | |
| Purity by Titration | 92.5 - 100.5 % |
| Based on total alkyl sulfate content, As is | |
| Purity (GC) | ≥ 65 % |
| Lauryl sulfate, Sodium salt | |
| Recommended Retest Period | ---------- |
| 3 years | |

Specification: PRD.1.ZQ5.10000012402

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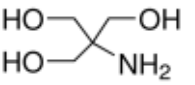
# Product Specification

Product Name:
Trizma® base - BioXtra, pH 10.5-12.0 (1 M in $H_2O$), ≥99.9% (titration)

| | |
|---|---|
| **Product Number:** | **T6791** |
| CAS Number: | 77-86-1 |
| MDL: | MFCD00004679 |
| Formula: | C4H11NO3 |
| Formula Weight: | 121.14 g/mol |




| TEST | Specification |
|---|---|
| Appearance (Color) | White |
| Appearance (Form) | Crystalline Powder |
| Solubility (Color) | Colorless |
| Turbidity | ≤ 10.0 NTU |
| 1M in H2O at 20 deg C | |
| Infrared spectrum | Conforms to Structure |
| Loss on Drying | ≤ 0.5 % |
| 110 deg C | |
| Residue on ignition (Ash) | ≤ 0.01 % |
| SO4, 900 deg C | |
| Insoluble matter | ≤ 0.005 % |
| Arsenic (As) | < = 0.0001% |
| Chloride (Cl) | ≤ 0.005 % |
| Sulfate (SO4) | ≤ 0.005 % |
| Aluminum (AL) | ≤ 0.0005 % |
| Bismuth ( Bi) | ≤ 0.0005 % |
| Lead (Pb) | ≤ 0.0005 % |
| Cadmium (Cd) | ≤ 0.0005 % |
| Cobalt ( Co) | ≤ 0.0005 % |
| Copper (Cu) | ≤ 0.0005 % |
| Strontium (Sr) | ≤ 0.0005 % |
| Zinc (Zn) | ≤ 0.0005 % |
| Barium (Ba) | ≤ 0.0005 % |
| Potassium (K) | ≤ 0.005 % |

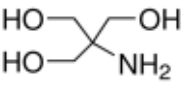
Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

# Product Specification

Product Name:
Trizma® base - BioXtra, pH 10.5-12.0 (1 M in $H_2O$), ≥99.9% (titration)

| | |
|---|---|
| **Product Number:** | **T6791** |
| CAS Number: | 77-86-1 |
| MDL: | MFCD00004679 |
| Formula: | C4H11NO3 |
| Formula Weight: | 121.14 g/mol |




| TEST | Specification |
|---|---|
| Calcium (Ca) | ≤ 0.001 % |
| Chromium (Cr) | ≤ 0.0005 % |
| Magnesium (Mg) | ≤ 0.0005 % |
| Manganese (Mn) | ≤ 0.0005 % |
| Iron (Fe) | ≤ 0.0005 % |
| Lithium (Li) | ≤ 0.0005 % |
| Molybdenum (Mo) | ≤ 0.0005 % |
| Sodium (Na) | ≤ 0.005 % |
| Nickel (Ni) | ≤ 0.0005 % |
| A260 UV Absorption (1 M in H2O) | ≤ 0.025 |
| A280 UV Absorption (1 M in H2O) | ≤ 0.020 |
| pH 1 M in water, at 20 Deg C | 10.5 - 12.0 |
| Titration with H2SO4 (Anhydrous) | ≥ 99.9 % |
| Recommended Retest Period 6 years | ---------- |

Specification: PRD.7.ZQ5.10000005178

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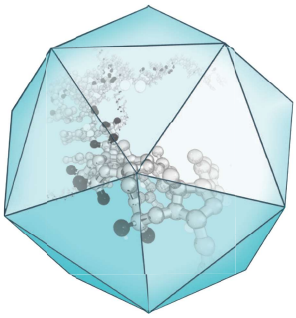
# ARMORED RNA®



## THE GOLD STANDARD FOR MOLECULAR QUALITY CONTROL

Armored RNA products can be deployed as controls at all stages of a molecular testing workflow from extraction to detection and they serve as a total process control for your molecular assays. They are the most commonly used controls across major commercial molecular infectious disease assays.

The versatile, stable and non-infectious nature of Armored RNA controls renders them usable across all stages of an assay's lifecycle, from development to routine use in the clinical laboratory.

### REDUCED COMPLEXITY

- Flexible: Virtually any nucleic acid sequence can be encapsulated as a control, offering a unique, consistent option for assay controls across a wide range of targets
- Safe: Synthetic and non-infectious Armored products simplify shipping and storage while maximizing cost savings

### OPTIMIZED WORKFLOW

- Scalable: From pilot lot volume to full cGMP manufactured lots, scalable manufacturing allows incorporation of Armored products in all stages of assay development and routine testing, ensuring end-to-end continuity of control material
- Stable: Degradation resistance in the majority of biological matrices and compatibility with most RNA-based clinical assays after simple extraction or heat-lysis, ensures suitability in most assays with little-to-no workflow disruption

### QUALITY PERFORMANCE

- Reliable: Highly standardized, quality controlled and proven manufacturing conditions up to full cGMP manufacturing, ensure product quality and reliability are consistent over time

Asuragen®

For Research Use Only. Not for use in diagnostic procedures.

## ARMORED RNA® & ARMORED RNA QUANT®

Armored RNA® (AR) is Asuragen's original qualitative product that is constructed through expression and coat protein encapsulation in *E. coli.*

Armored RNA Quant® (ARQ) is preferred for quantitative applications and is constructed by *in vitro* encapsulation of an *in vitro* transcribed (IVT) RNA.

## ORDERING INFORMATION

| CATALOG PRODUCTS AVAILABLE FOR IMMEDIATE SUPPLY* | | | |
|---|---|---|---|
| **ARMORED RNA®** | **ITEM #** | **SIZE** | **PRICE** |
| Armored RNA Hepatitis C Virus (Genotype 2b) | 42010 | 250 µL | $252 |
| Armored RNA Hepatitis G Virus | 42024 | 250 µL | $252 |
| Armored RNA Enterovirus | 42050 | 250 µL | $252 |
| **ARMORED RNA QUANT®** | **ITEM #** | **SIZE** | **PRICE** |
| Armored RNA Quant Enterovirus (5 x $10^5$ copies/mL) | 42102 | 5 x 100 µL | $528 |

*Subject to inventory availability

Over 10 years, we have developed core know-how for a broad range of target sequences and have retained the capabilities to rapidly manufacture and custom fill a number of defined-target Armored products using established and proven development and production processes.

| DEFINED-TARGET ARMORED PRODUCTS* | | | |
|---|---|---|---|
| **HUMAN IMMUNODEFICIENCY VIRUS** | **ITEM #** | **ENTEROVIRUS** | **ITEM #** |
| Armored RNA HIV (Subtype B) | 42000 | Armored RNA Enterovirus | 42050 |
| Armored RNA Quant HIV (Subtype B) ($5x10^5$ copies/mL) | 42103 | Armored RNA Quant Enterovirus ($5x10^5$ copies/mL) | 42102 |
| **HEPATITIS C VIRUS** | **ITEM #** | **NORWALK VIRUS** | **ITEM #** |
| Armored RNA Hepatitis C Virus (GT 1a) | 42004 | Armored RNA Norwalk Virus (Genogroup I) | 42030 |
| Armored RNA Hepatitis C Virus (GT 1b) | 42006 | Armored RNA Norwalk Virus (Genogroup II) | 42032 |
| Armored RNA Hepatitis C Virus (GT 2a/c) | 42008 | **WEST NILE VIRUS** | **ITEM #** |
| Armored RNA Hepatitis C Virus (GT 2b) | 42010 | Armored RNA West Nile Virus (HNY1999) | 42040 |
| Armored RNA Hepatitis C Virus (GT 3a) | 42012 | Armored RNA West Nile Virus (NEN) | 42041 |
| Armored RNA Quant HCV (GT 2b) ($5x10^5$ copies/mL) | 42101 | Armored RNA West Nile Virus (Cap) | 42042 |
| **HEPATITIS G VIRUS** | **ITEM #** | **SARS** | **ITEM #** |
| Armored RNA Hepatitis G Virus | 42024 | Armored RNA SARS (BNI-1) | 42090 |
| **DENGUE VIRUS** | **ITEM #** | Armored RNA SARS (CoV-NC) | 42091 |
| Armored RNA Dengue Virus (Type 1) | 42044 | | |

*These controls can be supplied as development or manufacturing (cGMP) grade materials.
For Research Use Only. Not for use in diagnostic procedures.

For more information, please contact | **armored@asuragen.com**

Asuragen®

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