

Materials List for:

Minimum Burning Pressures of Water-based Emulsion Explosives

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Materials

| Name | Company | Catalog Number | Comments |
|---------------------------------------------------------|---------------------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nitrile gloves (100/pk) | Fisher Scientific | 19149863B | https://www.fishersci.ca/shop/products/purple-nitrile-exam-gloves-6/19149863b?searchHijack=true&searchTerm=19149863B& |
| NiCr60 wire 24 AWG (200 feet per roll) | Omega Engineering | NIC60-020-200 | http://www.omega.ca/pptst_eng/NI60.html |
| Wire cutters: Mini Diagonal Cutting Pliers, 5 in. | Canadian Tire | Product #058-4736-0 | http://www.canadiantire.ca/en/pdp/mastercraft-mini-diagonal-cutting-pliers-0584736p.html#srp |
| Mini needle nose pliers, 5 in. | Canadian Tire | Product #058-4731-0 | http://www.canadiantire.ca/en/pdp/mastercraft-mini-needle-nose-pliers-0584731p.html#srp |
| Crimping tool, 8.5 in. | Canadian Tire | Product #058-4617-4 | http://www.canadiantire.ca/en/pdp/mastercraft-8-in-crimping-tool-0584617p.html#srp |
| Bare copper wire (14AWG) | Electronics Plus | 2000BC-14-5/5 lb roll | Bare (uninsulated) copper wire |
| Non-insulated butt-splice connectors (100 units) | Electrosonic | Panduit BS14-C | http://www.alliedelec.com/panduit-bs14-c/70044299/?mkwid=si03ezhXY&pclid=64596948257&pkw=%20bs14-c&pmt=b&pdv=c&gclid=CM_1jO-DsdMCFZKlswodMugASw |
| Stainless Steel pipe nipples (10 - 20 units) | Wolseley Inc. | SSNKX3 | sample cells: 76.2 mm long x 12.7 mm od (3" long x 0.5" od) with 3 mm slit machined along the length of the cell, painted inside and out with two coats of non-conductive paint (e.g., high-heat barbecue Armor Coat or Krylon brands). |
| High-temperature non-conductive paint | Canadian Tire | Product #048-0648-8 | http://www.canadiantire.ca/en/pdp/armor-coat-bbq-paint-0480648p.html#srp |
| Solid green neoprene stoppers (size 0; 1 package of 68) | Cole-Palmer | OF-62991-04 | https://www.coleparmer.ca/i/cole-parmer-solid-green-neoprene-stoppers-standard-size-0-68-pk/6299104?searchterm=OF-62991-04 |
| Spatula, stainless steel | Fisher Scientific | 14-375-10 | https://www.fishersci.ca/shop/products/fisherbrand-spoonula-lab-spoon/1437510?searchHijack=true&searchTerm=1437510&sea |
| 7.5 L Pressure Vessel | Autoclave Engineers | 40A-9104, 9122, 40C-1365, 2376 | minimum internal diameter of 127 mm; equipped with 20.7 MPa (3000 psi) rupture disc assembly; Solenoid& air operated valve on the outlet; http://www.autoclaveengineers.com/ |

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| | | | products/pressure_vessels/PV_Bolted_Closure/index.html |
| Electrodes (set of 2) | Electro-meters | Conax EG-375-A-SS-T, 25.4 cm (10") conductor | with Teflon sealing glands; https://www.conaxtechnologies.com/wp-content/uploads/2016/03/5001D-80-105-Flanges-and-Accessories.pdf |
| Rupture disc | Oseco | 39859-3-1 | http://www.oseco.com/imgUL/files/STD_0515.pdf |
| Universal safety head (rupture disc assembly) | Autoclave Engineers | SS-4600-1/2F | http://www.autoclave.com/products/accessories/universal_safety_heads/index.html |
| High-pressure valve (air-operated, fail-open) | Autoclave Engineers | 1/2" SW8XXX-CM | http://www.autoclave.com/aefc_pdfs/OM_P1_Manual_Air_Valve.pdf?zoom_highlightsub=air+operated+valve#search=air+operated+valve |
| Pressure transducer | Omega Engineering | PX176-3KS5V | Amplified Voltage Output Transducer for Absolute; 0-20.7 Mpa (0-3000 psi) sealed gauge, 91 cm (36") cable http://www.omega.ca/pptst_eng/PX176.html |
| Digital multimeter | Amazon.com | Fluke Model 110 Plus | https://www.amazon.com/Fluke-110-Plus-essential-multimeter/dp/B01JX912I2 |
| Data acquisition Interface | IOTECH | Model Daqlab 2000 with DBK15 acquisition board | http://www.mccdaq.com/products/daqlab2000s |
| Personal Computer with monitor and National Instruments DASyLab Software (V13, basic) installed | DELL | CORETMi7 vProTM | Computer must meet requirements for DasyLab 13: 1GHz + x86 compatible; Windows 7 or 8, 32-bit or 64-bit; 2 GB+ RAM |
| oscilloscope | | | Any storage oscilloscope with 2 input channels (0-10 V), 12k samples per channel and acquisition frequency of 10 ms/sample. |
| Precision Shunt Resister | Canadian Shunt Industries | LA-20-100 | (20 A, 100 mV) Enclosed in custom box http://www.cshunt.com/pdf/la.pdf |
| Constant Current Power Supply | Agilent | N6700B Low-Profile MPS Mainframe, 400W; N6754A DC Power Supply with High Speed Test Extensions option | http://www.keysight.com/en/pd-1125217-pn-N6754A/high-performance-autoranging-dc-power-module-60v-20a-300w?cc=CA&lc=eng |
| Inlet valve | Ottawa Valves and Fittings | Swagelok SS-43GS4-PT | https://www.swagelok.com/en/catalog/Product/Detail?part=SS-43GS4 |
| Full face mask | Cooper Safety | 3M 7800 series | http://www.coopersafety.com/product/3m-7800-series-full-face-respirator-1124.aspx |
| General purpose cartridges | Cooper Safety | 3M 60923 | http://www.coopersafety.com/product/3m-60923-organic-vapor-acid-gas-p100-cartridge-1533.aspx?sid=101950 |