SAFETY CARTRIDGE™

An innovative rupture disc solution to eliminate leaks and installation errors, and increase safety.

FEATURING THE LOWEST $K_r$ IN THE INDUSTRY, NON-INVASIVE SENSING, AND FAIL-SAFE DESIGN
Throughout the evolution of rupture disc technology for pressure relief systems, Oseco has been with you every step of the way. Oseco delivers reliable products on the leading edge of technology. Our tradition continues with the introduction of the most innovative rupture disc system to be created in the last twenty years, the Oseco Safety Cartridge™.

- HERMETICALLY SEALED DESIGN to eliminate leak paths
- FULLY INTEGRATED HOLDER-DISC to eliminate installation errors
- ONE-PIECE ASSEMBLY to eliminate torque issues
- REDUCED cost of ownership

THE FUTURE
Oseco Safety Cartridge™

One Piece...Peace of Mind | PAGE 3
OSECO ELIMINATES common PAIN POINTS

After many years of research and industry experience, Oseco continues to address today’s issues with rupture disc systems. Customers have asked for solutions to these common pain points and the Oseco Safety Cartridge™ delivers.

1. PAIN POINT: INSTALLATION
   - Misalignment of piping
   - Uneven torque
   - Mishandling / damage
   - Difficult applications

   SOLUTION: FULLY INTEGRATED HOLDER-DISC
   - Handling of the disc is eliminated
   - Immune-force is transferred through the outlet, not to the disc
   - Dome is always protected
   - Reduces installation time

2. PAIN POINT: LABOR CONCERNS
   - Inexperienced maintenance technicians
   - Contract labor
   - Lack of installation training
   - Employee turnover

   SOLUTION: INTUITIVE DESIGN
   - Shortens learning curve and supports correct installation

3. PAIN POINT: LEAKING
   - Between holder and flange
   - Between rupture disc and holder
   - Multiple leak paths

   SOLUTION: ONE-PIECE ASSEMBLY
   - Follows torque specs of gaskets—force placed on the outlet rather than the disc
   - Patented electron beam weld design

4. PAIN POINT: FUGITIVE EMISSIONS
   - EPA limits on chemical types
   - Emissions of VOCs, HRVOCs, and VHAPs
   - Location and repair of leaking components

   SOLUTION: HERMETICALLY SEALED DESIGN
   - Cannot leak outside of the piping
   - Supports LDAR and EPA Guidelines (HRVOCs)
Oseco’s patented design allows the traditional three components of a rupture disc system to be combined into **ONE HERMETICALLY SEALED COMPONENT.**

**Easy Installation**

1. **Disassembly**
   - SAFETY EQUIPMENT
     - Safety Goggles
     - Gloves
     - Other as required by facility
   - TOOLS & MATERIALS
     - Cleaning Solvent compatible with service media
     - Torquing Specifications
     - Torque Wrench

2. **Placement & Alignment**

3. **Torquing & Inspection**

**Technical Specifications**

**Oseco Safety Cartridge™ Featuring OPR+/OPK+ Technology**

<table>
<thead>
<tr>
<th>SIZE</th>
<th>MATERIAL</th>
<th>OPR+ MIN psig (bar)</th>
<th>OPR+ MAX psig (bar)</th>
<th>OPK+ MIN psig (bar)</th>
<th>OPK+ MAX psig (bar)</th>
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<tbody>
<tr>
<td>1” DN 25</td>
<td>316 Inc Mon Hast C</td>
<td>100 (6.9)</td>
<td>250 (17.2)</td>
<td>100 (6.9)</td>
<td>1160 (79.6)</td>
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<tr>
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<td>1015 (69.98)</td>
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<tr>
<td>2” DN 80</td>
<td>316 Inc Mon Hast C</td>
<td>10 (0.69)</td>
<td>175 (11.6)</td>
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<td>255 (17.2)</td>
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<tr>
<td>4” DN 100</td>
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<td>175 (11.6)</td>
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<td>363 (25.03)</td>
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**Oseco Safety Cartridge™ Featuring FAS™ Technology**

<table>
<thead>
<tr>
<th>SIZE</th>
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<th>FAS MIN psig (bar)</th>
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<td>110 (7.6)</td>
<td>160 (11.0)</td>
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<tr>
<td>1.5” DN 40</td>
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<td>105 (6.9)</td>
<td>160 (11.0)</td>
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<td>105 (6.9)</td>
<td>160 (11.0)</td>
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<tr>
<td>2” DN 80</td>
<td>316 Inc Mon Hast C</td>
<td>100 (6.6)</td>
<td>150 (10.3)</td>
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<tr>
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<td>316 Inc Mon Hast C</td>
<td>100 (6.6)</td>
<td>150 (10.3)</td>
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<tr>
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<td>160 (11.0)</td>
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**Kₜ Values - All Sizes**

<table>
<thead>
<tr>
<th>OPR+</th>
<th>OPK+</th>
<th>FAS</th>
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<tbody>
<tr>
<td>Kₑₜ</td>
<td>Kₑₜ</td>
<td>Kₑₜ</td>
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<tr>
<td>0.78</td>
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</table>

(1) High pressure circular scored rupture disc with knuckle
(2) Low pressure rating with 316 Stainless Steel rupture disc—consult factory for other materials

**Cross-section**

Three pieces welded into **ONE.**

[Image of cross-section]

**Oseco’s Integral Holder Solution** for easy installation and critical applications.

- Operating Ratio Up to 95%
- Materials of construction: Hastelloy® C, 316 Series Stainless Steel, Inconel® 600, and Monel®
- Available for gas and liquid service
- Leak checked to 1x10⁻⁸ cc-atm/sec using helium
- Non-fragmenting design
- Fully isolated pressure relief device allows for torquing to any gasket specifications
- Withstands full vacuum

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**SAFETY EQUIPMENT**

- Safety Goggles
- Gloves
- Other as required by facility

**TOOLS & MATERIALS**

- Cleaning Solvent compatible with service media
- Torquing Specifications
- Torque Wrench

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[Image of one-piece solution]

**Oseco Safety Cartridge™ Featuring FAS™ Technology**

**Oseco Safety Cartridge™ Featuring OPR+/OPK+ Technology**

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[Image of one-piece solution]

**Oseco Safety Cartridge™ Featuring FAS™ Technology**

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[Image of one-piece solution]

**Oseco Safety Cartridge™ Featuring FAS™ Technology**

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[Image of one-piece solution]
OSECO PRODUCTS AND SERVICES PROVIDE COMPLETE PEACE OF MIND

SERVICES
- Engineering and Maintenance
- Training Seminars
- Safety Surveys
- Custom Engineered Solutions
- Expedited Shipments
- Emergency Response Team
- 24/7/365 Customer Service

PRODUCT LINE
- Oseco Safety Cartridge™
  Single piece unit eliminates multiple leak paths
- Ultra High Pressure Scored Reverse-Buckling Disc Assembly
  HPSR: Single piece unit designed for a burst pressure over 6,000 psig
- High Performance Reverse-Buckling Disc
  Pro+ KRGL: Industry leading $K_R$ value
  OPR+/OPK+: Innovative non-invasive burst detection system
- High Performance Forward-Acting Scored Disc
  FAS™: Lowest $K_R$ value available in the market
- Composite Rupture Disc
- Standard Rupture Disc
- Explosion Protection
- Burst Detection Systems

Let us help you with all your pressure relief questions. Contact Oseco at (800) 395-3475 or email us at info@oseco.com.

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