



Changing the landscape in a challenging industry

Whether it's upstream, midstream or downstream, your needs for innovative business solutions are growing as fast as the oil and gas industry. You need technology powerful enough to withstand the harshest environments and give you a market-leading edge.

3M draws from a diverse technology and science portfolio to deliver comprehensive solutions that help our oil and gas customers take on today's challenges and plan for future opportunities. Work with us to accelerate progress in helping protect people and their environment, extend the life of critical assets and improve productivity across your global operations.

3M oil and gas customers access solutions from our large and diverse technology platform, 200+ labs and a global network of scientists, researchers and inventors who are ready to help you endure the industry's toughest environments.

Working closely with customers, 3M has developed several breakthrough products – from sand screens to advanced coatings to respirators – built for the well site, the refinery and everywhere in between.

Upstream

Exploration & Production

Rigs and platforms around the world are using a wide variety of 3M technologies to help ensure peak operational efficiency and productivity.

Midstream

Transportation & Storage

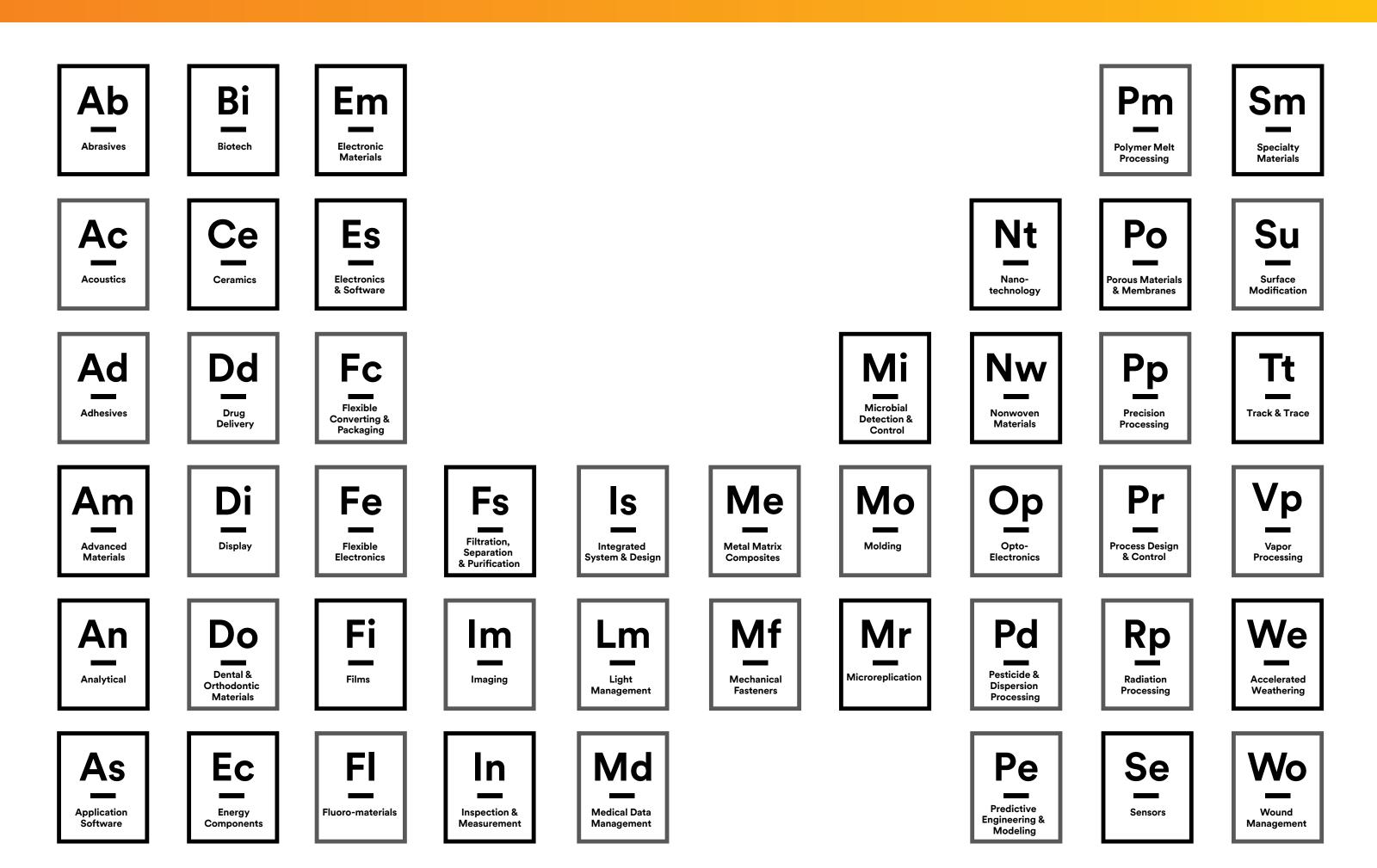
Pipeline and tank operations depend on advanced 3M technologies to maintain safe, uninterrupted midstream product flow in some of the world's harshest and most challenging environments.

Downstream

Refining & Processing

Refining facilities worldwide utilize 3M technologies to meet increasing global needs through improved productivity and reduced costs.

Access 3M's 40+ proven technologies for all your oil and gas challenges.





Upstream

Exploration and Production

Increased pressure to produce quickly means you have to make every exploration operation count. 3M technologies can help you succeed in multiple environments and applications.

Reinforce your operations with density-reducing additives, filtration for production fluids, and other advanced 3M technologies specially engineered to optimize performance in extreme environments and downhole operations.

Midstream

Transportation and Storage

With increased project demands, accelerated timelines and escalating labor costs, productivity and onschedule completions are essential for success. Turn to 3M Oil and Gas for innovative solutions to your midstream challenges.

Pipeline transport and storage operations around the world count on advanced 3M technologies to maintain safe, uninterrupted midstream product flow – even across rugged terrain and in challenging subsea environments.

Downstream

Refining and Processing

Whether it's planned outages, variations of input quality, supply disruptions or unexpected maintenance, your downstream operations need to weather the changes productively. Bolster your worksites with precisely engineered 3M solutions.

At 3M, imagination and good science come together to put innovation to work for you – from filtration technologies to superabrasives to maintenance and repair.

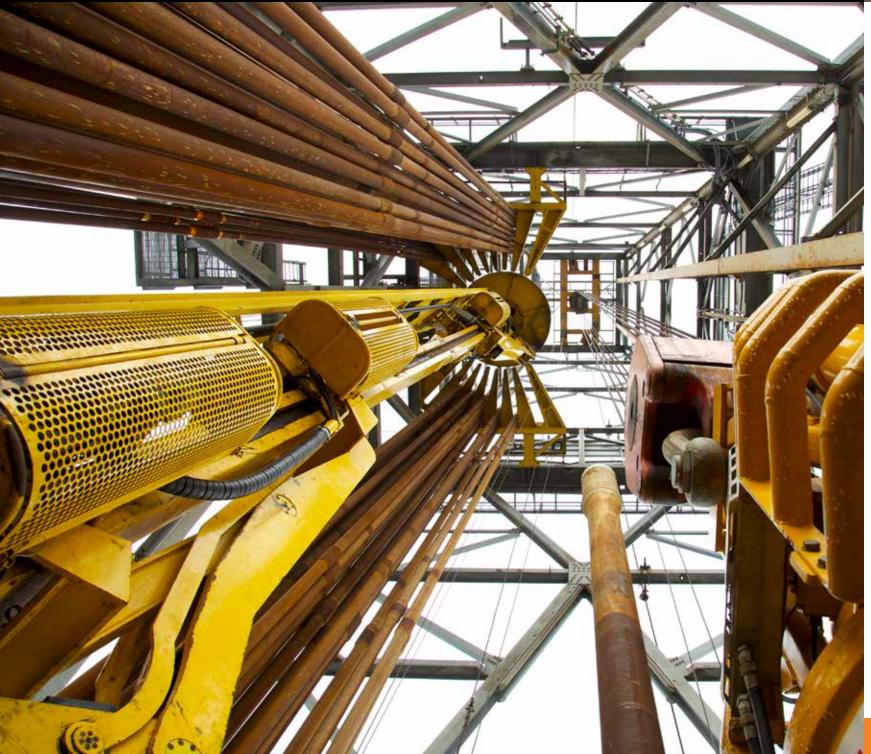
Improving productivity

With challenging geographies, rising operational costs and environmental concerns, accessing established and unconventional reserves is getting harder all the time. But you can conquer these challenges – from oil sands, to desert rigs, to permafrost and offshore platforms – with breakthrough 3M products and technologies designed to help you meet productivity goals with confidence.



Extending the life of critical assets

From well head to gas pump, your operations are built on a solid steel foundation. Fighting back the continual abrasion, corrosion and weathering of your assets is a constant endeavor. More than 60 years ago, 3M invented Fusion-Bonded Epoxy Coating to protect steel pipes and has been developing new and innovative ways to protect your critical infrastructure ever since.





Upstream

Exploration and Production

You need to trust that your production equipment will thrive in the toughest environments.

3M solutions are engineered with advanced properties to last longer, maximizing uptime and avoiding costly downtime.

3M advanced materials are extremely resistant to corrosion, erosion, acids, brines and high temperatures. Plus, they offer incredible durability and maximized flow capacity.

Midstream

Transportation and Storage

Managing your midstream operations involves actively combatting corrosion to protect billions of dollars of infrastructure. 3M works continuously to evolve and innovate solutions to maintain the integrity of pipelines and other assets against corrosive agents.

When a pipeline must traverse 260 kilometers of hot, rocky terrain and still maintain safe, uninterrupted product flow, high performance coatings are mandatory. 3M meets this challenge with pipe coatings for both internal and external use, as well as in-field rehabilitation applications for girth weld and field joint coatings.

Downstream

Refining and Processing

There is no time for an unexpected interruption in your downstream project timelines. Team up with 3M for advanced technologies that defend your operations against premature deterioration of refinery assets resulting in unscheduled plant shutdowns.

From pipeline to storage tank, corrosion protection solutions from 3M help extend downstream oil and gas equipment life – reducing downtime, maintenance costs and risk of failure. For more than 60 years, our customers have inspired us to develop solutions that help critical infrastructure run smoothly and become stronger for future innovation and progress.



Upstream

Exploration and Production

Well sites and rigs can be dangerous, and you'll do everything you can to protect your workforce from harm.

3M shares your passion for safety and provides a variety of solutions for all upstream environments.

From personal protection equipment to high capacity sorbents for spill containment and clean-up, 3M safeguards your worksites and workers with specialized products for the oil and gas industry.

Midstream

Transportation and Storage

From the shipyard through miles of pipeline, your workers give their best to ensure a timely and safe delivery. 3M respects the skill and effort it takes to manage midstream operations and has developed a full portfolio of safety solutions – including welding protection – to safeguard your workers in highly demanding environments.

In a Swedish shipyard, 3M noticed an opportunity to streamline a safer workflow. Welders were constantly flipping their helmets up and down to see better – taking time and compromising eye safety. 3M™ Speedglas™ resolves this issue with a transparent eye-shield that allows welders to see safely and clearly with continuous protection. Let us put insights like this to work fortifying the safety and efficiency of your midstream operations.

Downstream

Refining and Processing

Fire at a refinery is something you take careful measures to avoid – people's lives depend on it. 3M Fire Protection Products can help mitigate fire spread in downstream environments, providing additional time for fire control and evacuation.

As little as 10 extra seconds in a fire situation can help prevent injuries, fatalities and asset losses at your facilities. 3M brings more than 30 years of fire protection experience to systems and solutions designed for early detection and suppression that reinforce critical electrical circuitry, structural components and vessel skirts.

Protecting people and their environment

You know what's at stake and what it takes to safely maintain successful oil and gas operations. The health and safety of your people and their environment is paramount. In 1972, 3M invented the first NIOSH-approved filtering facepiece respirator and disposable earplugs, and now, we have a full line-up of high-performance safety products and professionals ready to support you, your workforce and your business operations.





With more than 70 worldwide locations, 3M is always there to solve your toughest challenges.

For more information on 3M Oil & Gas Solutions, contact your local 3M representative. Also, visit us at 3M.com/oilandgas.

Continue exploring 3M Oil & Gas Solutions by viewing our interactive solutions map at: go.3m.com/OGSolutions.

What's next?

The industry is changing quickly. New and unconventional technologies are making extractions possible in places once considered unrecoverable. As your opportunities expand, so will your need for new technology. 3M Oil & Gas is deepening our commitment to providing innovative solutions that can help you succeed.

Leverage the strength of our technology platforms to take on the challenges of ultra-deep wells, arctic drilling, oil sands, pre-salts, mega structures in remote locations and more. 3M is here to support the progress and expansion of your business with industry-leading solutions that will endure in these harsh environments well into the future.



Upstream

Protecting people and their environment Extending the life of critical assets Improving productivity With narrower production windows and greater pressures on time and productivity, exploration and production operations around the world are putting advanced 3M technologies to use — reducing downtime, maintaining risers, pipeline and equipment, and protecting workers in hazardous environments — helping to enhance the efficiency of directional drilling operations.

Products to protect people and their environment:



Hearing protection and communications solutions

Workers in oil and gas, chemical and other volatile industries that require Intrinsically Safe communication equipment have a new hearing protection option. The 3M™ PELTOR™ MT Series Intrinsically Safe Two-Way Communication Headset is designed for workers who need clear, reliable communication while working in volatile, high-noise environments.



Sorbents

3M™ Petroleum Sorbents are ideal for absorbing oil from areas where water may also be present – exterior locations, for example. They are designed to not disintegrate or sink, even when saturated with oil, and are easy to dispose of. Multiple formats allow for control, cleanup and recovery of petroleum-based liquids. (Varieties include pads, rolls, sweeps, booms, pillows, folded and kits.)



Safety tapes and treads

3M™ Safety-Walk™ Slip-Resistant Tapes and Treads have extra-large abrasive particles that provide additional slip and fall protection, tough polymer construction that stands up longer underheavy traffic, and an open abrasive pattern that resists clogging and reduces cleanup time.



Respiratory protection

3M™ Rugged Comfort Half Facepiece Reusable Respirator provides enhanced comfort in a durable and slim profile design while helping to protect against both particles and/or gases and vapors. Disposable, filtering facepiece respirators are available in a full range of comfort, convenience and value. Powered and supplied air respirators provide a comfortable stream of filtered room air to a wide variety of head gear options.

Products to protect people and their environment:



Visibility solutions

3M™ Scotchlite™ Reflective Material is used to make people visible at dusk, at night or in inclement weather conditions. Outdoors, 3M™ Diamond Grade™ Conspicuity Markings are six times brighter than conventional markings and meet DOT regulations.



Head protection

3M™ Full Brim Hard Hats utilize a unique Uvicator™ Sensor that lets the wearer know when to replace the hard hat due to UV exposure. The hat also includes a suspension that sits lower on the head to reduce pressure and increase security.



Fire protection products

3M™ Interam™ Endothermic Mat is designed to meet oil and gas fire protection needs by providing cable trays, conduits and structural steel a full envelope of protection in the event of a fire. 3M™ Fire Barrier Rated Foam FIP 1-Step will help you finish your firestop installations 3X faster, saving you time, money and frustration with a one-part, non-runny chemistry that expands to complete complex installations without the need for mineral wool and/or bricks.



Welding Safety Products

When welders can't make out all the details or distinguish colors through the auto-darkening filter of a welding shield, it can make welding more challenging. To give welders superior visibility in both dark and light state, 3M introduced 3M™ Speedglas™ Auto-Darkening Filter Kit 9100XXi to provide more detail, contrast and natural-looking color, giving welders greater precision and an overall improved welding experience.

Products to extend the life of critical assets:



Sand screens and sleeve protection

3M™ Ceramic Sand Screens offer a breakthrough sand control technology designed especially for demanding conditions where abrasion is a major challenge. It improves upon the known wire wrap principle by taking advantage of the unique properties of technical ceramics.



Tubular and casing protective coatings

3M™ Scotchkote™ Fusion Bonded Epoxy Coatings provide pipeline corrosion protection with a variety of functional protective coatings for both internal and external application on tubing and casing. They are engineered to withstand harsh chemicals and conditions to extend the life expectancy and reliability of your equipment.





Scotch® High Strength Filament Tapes

Scotch® High Strength Filament Reinforced Tapes are used to contain the wire armoring used in the manufacture of flexible flowlines, risers and umbilicals with up to 3 times the strength of comparable tapes.



3M[™] Glass Bubbles (buoyancy and insulation)

High-strength, low-density hollow glass microspheres are used for protecting critical deepwater components.

3M™ Glass Bubbles are high-strength formulated with resin, resulting in improved thermal insulation and buoyancy in many kinds of syntactic foam compositions.



Ceramic bearings, seals and bushings

3M™ Ceramic Thrust Bearings are designed for oil and gas exploration and production operations in high temperature, abrasive, misaligned and shock/impact environments.



Fluoroelastomers

3M™ Dyneon™ Fluoroelastomers offer a variety of sealing and containment solution materials for process equipment designers and manufacturers. They are used in aggressive environments such as sour oil and gas, amine corrosion inhibitors, acids and steam.

Products to improve productivity:



Electrical splices and terminations

3M offers a wide range of tapes for electrical applications, as well as for special uses. This includes tapes for insulating, splicing and sealing.

3M™ Cold Shrink Terminations and Splices offer easy installation and reliable performance when terminating and splicing indoor and outdoor medium voltage cables.



Abrasives (diamond bond wheels)

3M™ Superabrasive Wheels are ideal for original manufacture and refurbishment of polycrystalline diamond (PCD) drill bits. They offer excellent form retention, reducing the need for truing, to help save time and improve your productivity.



Purification and filtration solutions

3M offers advanced filtration technologies for efficient contaminant removal in production operations.

Common 3M™ High Flow Filter

Cartridges can be used for applications such as injection water, produced water and completion fluids.

Products to improve productivity:



Glass bubbles (drilling and cementing)

Specially formulated for a high strengthto-weight ratio, 3M™ Glass Bubbles allow great survivability under demanding down-hole conditions. They are engineered materials with outstanding batch-to-batch consistency for easier and more accurate formulation.



Engineered surface treatment for proppants

3M™ Engineered Surface Treatments work to improve phase relative permeability of the proppant, improve conductivity of the proppant fracture and maintain absolute permeability of the proppant, thereby increasing fractured well productivity.



Well stimulation chemicals

3M™ Well Stimulant works by changing the wettability of a sandstone formation or silicabased proppant pack. This allows the water or condensate to flow more freely — increasing gas well production.

Spotlight on sand control

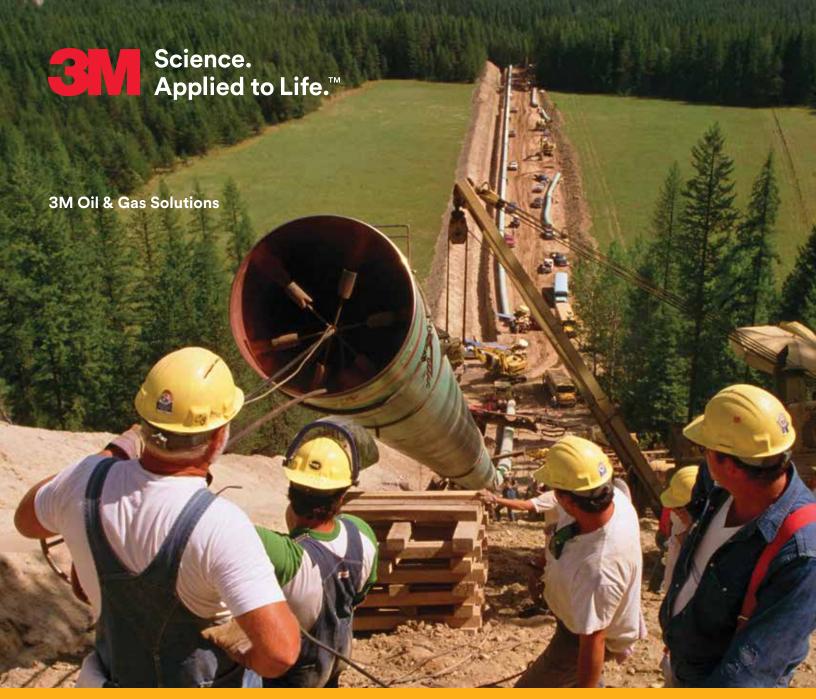
Enhance the productivity and efficiency of your oil and gas operations with 3M™ Ceramic Sand Screen Systems. Extremely resistant to corrosion, erosion, acids, brines and high temperatures, these incredibly durable systems utilize the unique properties of advanced ceramics to minimize sand production while maximizing your flow capacity and screen life.



To learn more, contact your local sales representative or call 1-866-279-1281.



Oil & Gas Solutions 3M Center, Building 504-01-01 St. Paul, MN 55144-1000 USA



Midstream

Protecting people and their environment Extending the life of critical assets Improving productivity Transportation and storage operations count on safe, uninterrupted midstream product flow – even across rugged terrain and in challenging subsea environments. 3M midstream technologies help extend the life of steel pipelines and structural components to keep your operations running smoothly.

Products to protect people and their environment:



Respiratory protection

3M™ Rugged Comfort Half Facepiece Reusable Respirator provides enhanced comfort in a durable and slim profile design while helping to protect against both particles and/or gases and vapors. Disposable, filtering facepiece respirators are available in a full range of comfort, convenience and value. Powered and supplied air respirators provide a comfortable stream of filtered room air to a wide variety of head gear options.



Hearing protection and communications solutions

Listen, communicate and protect. The 3M™ Peltor™ ORA TAC In-Ear Communications Headset features noise canceling, in-ear microphone technology that delivers clear voice messages when transmitting over a 2-way radio. Designed for extended wear, this system eliminates the need for a boom microphone and can be used while wearing a respirator.



Welding safety products

As a global leader in providing welding safety equipment, 3M™ Speedglas™ combines ADF technology with an innovative wide-view grinding visor that offers a greater field of view in all directions, while a smooth flip-up pivot mechanism assures effortless transition from welding to grinding modes.



Sorbents

3M™ Petroleum Sorbents are ideal for absorbing oil from areas where water may also be present — exterior locations, for example. They are designed to not disintegrate or sink, even when saturated with oil, and are easy to dispose of.

Products to extend the life of critical assets:



External coatings

3M™ Scotchkote™ products range from liquid to powder coatings and offer a wide variety of field applications where corrosion protection of metal, including tanks, valves, piping and special fabrications, is needed.



Corrosion tapes

3M™ Scotchrap™ 50 & 51 Tapes are tough, polyvinyl chloride-based tapes with special high-tack adhesives, specially formulated to resist corrosion of metal piping systems above and below ground, and fittings and joints on all mill-coated pipe and electrical conduit systems.

Products to improve productivity:



Internal flow coatings

3M™ Scotchkote™ Internal Flow Coatings are designed to help protect the internal surfaces of (steel) pipe against corrosion as well as help provide flow enhancement. In addition, these coatings help provide excellent resistance to CO₂, H₂S, CH₄, petroleum distillates and brines at elevated temperatures and pressures.



Advanced abrasives

Go from fast cuts to clean surfaces with ease. Experience a new era in grinding with long-lasting Cubitron™ II abrasives, featuring proprietary, revolutionary 3M precision-shaped ceramic grain. Get at those hard-to-reach corners and crevices with 3M bristle brushes for a fast, efficient finish.

Products to improve productivity:



Spray system

3M™ Scotchkote™ Spray System is designed to apply a liquid corrosion coating to help improve application efficiency, reduce waste and coat in difficult areas. It works especially well for coating girth welds, short segment repair and custom field applications. This product is also used for rehabilitation of aging pipelines.



Locating and marking

3M™ Dynatel™ locators help to quickly and accurately identify the path and estimated depth of underground utilities. 3M™ ID markers provide a long-lasting method of marking underground assets and may be programmed to include customerspecific information for positive identification.

Spotlight on performance technology



3M™ Cold Shrink technology offers a safe alternative that avoids exposure to direct flame and delivers highly reliable long-term performance — even in extremely harsh environments.



3M™ Glass Bubbles, used to enhance the performance of syntactic foams, are engineered to survive even the most demanding conditions while protecting valuable equipment help ensure reliable product flow.

To learn more, contact your local sales representative or call 1-866-279-1281.



Oil & Gas Solutions 3M Center, Building 504-01-01 St. Paul, MN 55144-1000 USA



Downstream

Protecting people and their environment Extending the life of critical assets Improving productivity Downstream operations present a host of unique challenges, including seasonality, changes in input quality, supply disruptions and unforeseen maintenance. Oil refining, gas processing and production facilities worldwide use advanced technologies from 3M to help improve operation effectiveness and efficiency, and protect the health and safety of workers.

Products to protect people and their environment:



Respiratory protection

3M™ Rugged Comfort Half Facepiece Reusable Respirator provides enhanced comfort in a durable and slim profile design while helping to protect against both particles and/or gases and vapors. Disposable, filtering facepiece respirators are available in a full range of comfort, convenience and value. Powered and supplied air respirators provide a comfortable stream of filtered room air to a wide variety of head gear options.



Fall protection/ confined space

3M™ Fall Protection offers a full line of fall safety products including anchors, body harnesses, connecting devices and escape and rescue kits to help ensure the safety and security of workers at height. These products are designed for seamless integration and use. 3M offers training classes and tools to ensure proper use and implementation..



Safety and specialty matting

Strong, resilient and easy to clean, 3M™ Nomad™ Heavy Traffic Unbacked Scraper Matting has an open loop construction that lets mud, dirt and water pass through for firm, comfortable and dry footing.

Products to protect people and their environment:



Fire suppression fluid

A next-generation halon replacement, 3M™ Novec™ 1230 Fluid is designed to balance the concerns for human safety, performance and the environment. It extinguishes via a thermal cooling effect, and works as a gas, yet is a liquid at room temperature.



Visibility solutions

3M™ Scotchlite™ Reflective Material is used to make people visible at dusk, at night or in inclement weather conditions. Outdoors, 3M™ Diamond Grade™ Conspicuity Markings are six times brighter than conventional markings and meet DOT regulations.



Fire protection products

3M™ Interam™ Endothermic Mat is designed to meet oil and gas fire protection needs by providing cable trays, conduits and structural steel a full envelope of protection in the event of a fire. 3M™ Fire Barrier Rated Foam FIP 1-Step will help you finish your firestop installations 3X faster, saving you time, money and frustration with a one-part, non-runny chemistry that expands to complete complex installations without the need for mineral wool and/or bricks.

Products to extend the life of critical assets:



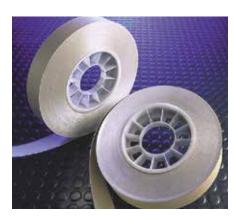
Corrosion tapes

3M[™] Scotchrap[™] 50 & 51 Tapes are tough, polyvinyl chloride-based tapes with special high-tack adhesives, specially formulated to resist corrosion of metal piping systems above and below ground, and fittings and joints on all mill-coated pipe and electrical conduit systems.



Tank coatings

3M™ Scotchkote™ Coatings help protect internal and external surfaces against attack from aggressive chemicals and fuels. Applications include everything from metal repair systems to rebuild tanks that suffer from signifi cant wall loss or leaking seams to external coating that can be applied to a minimally prepared surface, when abrasive blasting is not possible.



Protective tapes polyurethane protective tape, damping foil

3M[™] Polyurethane Protective Tapes provide an unique combination of high-strength abrasion and erosion resistance and conformability necessary to maximize performance. 3M™ Damping Foil absorbs and dissipates vibration, reduces noise, and reduces metal fatigue to increase the longevity of your operating equipment.

Products to extend the life of critical assets:



Electrical splices and terminations

3M offers a wide range of tapes for electrical applications, as well as for special uses. This includes tapes for insulating, splicing and sealing. 3M™ Cold Shrink Terminations and Splices offer easy installation and reliable performance when terminating and splicing indoor and outdoor medium voltage cables.



Metal/concrete repair products

3M™ Repair Products rapidly repair, rebuild and protect leaking pipes, tank floors, spalled sills and lintels, concrete floors, quarry tiles, steps, ramps, loading bays, etc., from mild chemical attack.



Electronic degreasers

3M™ Novec™ Electronic Degreaser is a strong, non-flammable cleaner ideal for removal of heavy oils, greases and handling soils from internal components of electronic equipment, precision devices and other sensitive equipment.



Products to improve productivity:



Advanced abrasives

Go from fast cuts to clean surfaces with ease. Experience a new era in grinding with long-lasting Cubitron™ II abrasives, featuring proprietary, revolutionary 3M precision-shaped ceramic grain. Get at those hard-to-reach corners and crevices with 3M bristle brushes for a fast, efficient finish.



Purification and filtration solutions

3M™ Purification Solutions include advanced filtration technologies that offer efficient contaminant removal in production facilities. Common applications include amine sweetening, hydrotreater protection, burner nozzle protection, sour water stripping, boiler feed water and condensate, and final product filtration.



Electrical construction materials

3M™ Electrical Products include a broad range of electrical solutions, from essential connectors to advanced cold shrink technology and fire barrier products, which provide faster, safer installations and long-term reliability.



Pump and turbine coatings

3M™ Scotchkote™ Coatings help protect pumps, turbines, impellers and valves against erosion, corrosion, chemical attack, abrasion and impingement while providing a low-friction surface for enhanced fluid flow and efficiency

Products to improve productivity:



Bonding, sealing and masking tapes

Bonding and sealing products can provide better performance, usability and faster assembly times. 3M fasteners are strong and yet easily removable. 3M™ VHB™ Tapes can replace screws, bolts and rivets, thereby reducing corrosion, water ingress points and stress localization.



Maintenance solutions

Whether you need to grind, blend, polish, sand, prep, cut, clean or repair a surface, 3M™ Industrial Abrasives can help find a solution. With 3M™ Industrial Adhesives you can find a wide array of spray, instant, structural and reactive adhesives to improve your processes.



Retail signage and graphics

3M is wherever you are, helping to build your brand, all the way to the pump. We offer solutions for commercial signage and vehicle graphics that deliver a consistent, durable message. 3M also offers reliable communication systems to keep your filling station running efficiently.

Spotlight on personal safety

3M has taken bold steps to revolutionize product design in head and face protection. With award-winning lightweight designs, 3M brings hard hats to a new level of comfort and durability. Be it hard hats, face shields or safety glasses, 3M provides robust, comfortable and easy-to-use products designed for strength and protection.



To learn more, contact your local sales representative or call 1-866-279-1281



Oil & Gas Solutions 3M Center, Building 504-01-01 St. Paul, MN 55144-1000 USA



Oil & Gas Solutions 3M Center, Building 504-01-01 St. Paul, MN 55144-1000 USA