

Safety Solutions for Pharmaceutical Industry.

The latest
innovations from 3M.
2021

Safety Solutions for Pharmaceutical Industry.

You can rely on 3M to equip health and safety professionals with personal protective equipment solutions for the multi-faceted world of pharmaceutical manufacturing.

Top Pharmaceutical Manufacturing Processes and Tasks

Active Pharmaceutical Ingredient

Helping health and safety leaders with the latest advancements in personal protection equipment when tackling the challenging occupational workplace hazards of API including highly potent APIs with an OEL lower than $1\mu\text{g}/\text{m}^3$.

Formulation and Packaging

Leveraging personal protective equipment innovations when addressing occupational health and safety hazards for drug substance formulation and packaging.

Maintenance and Cleaning

Delivering PPE solutions for potential occupational hazards with ongoing maintenance activities including decontamination or cleaning of cleanrooms or production suites with challenging cleaning agents such as peracetic acid and hydrogen peroxide.

Most Common Hazards in Pharmaceutical Manufacturing



Ignition



Working at heights



Respiratory



Exposure to noise



Eye and face injuries



Skin exposure



More information:
www.3M.co.uk/safety

3M Science of Safety Centre

A dedicated resource for Health and Safety professionals

The 3M Science of Safety Centre is packed full of free educational content that can:

- Help keep you up to date with safety regulations
- Give you access to specialist expertise for your industry
- Help to improve hazard awareness
- Allow you to engage your workforce in conversations about health and safety
- Help to improve health and safety standards in your workplace

Find out how for yourself by visiting: www.3M.co.uk/scienceofsafety

3M SafeTea Break

The 3M SafeTea Break provides you with the toolkit and platform you need to engage your workforce in a discussion about health, safety and long latency occupational diseases.

For more information or to download your free 3M SafeTea Break kit visit:
www.3M.co.uk/scienceofsafety



3M Science of Safety Webinars: Watch live or on-demand

Get all of the latest facts, practical tips and more from 3M's industry leading expert speakers. Register to attend live or watch on demand.

Visit www.3M.co.uk/soswebinars for more information and to register for upcoming events





Making great things possible. Comfortably.

3M™ Aura™ Particulate Respirators 9300+Gen3 Series

Safety and comfort are a top priority at 3M. The third generation of Aura™ respirator brings a number of improvements, combining impressive new technology with ergonomic design.

The new Cool Flow™ Comfort Valve opens easier to help reduce heat inside the respirator, delivering a more comfortable wearer experience.

Features and Benefits

Convenience of use

- › New upper and lower tabs
- › Simplified positioning and adjustment on the face with new 'grip' feature on the valve

Cooler breathing – 3M™ Advanced Electret (Filter) Media (AEM)

- › High charge on filter fibres attracts particles from a wider capture area, enabling less filter media to be needed
- › Low initial breathing resistance

New 3M™ Cool Flow™ Comfort Valve

- › Updated, modern and stylish design with clear cover lets you see new technology in action
- › Allows more hot air out to reduce heat buildup and increase comfort
- › Helps to minimise the risk of eyewear fogging from heat exiting through the media (certain models only)

Clear vision

- › Embossed top panel helps re-direct exhaled air, reducing fogging of eyewear
- › Curved, low profile design conforms well to nose and eye contours – helps provide a good field of vision
- › Designed to be compatible with safety eyewear from 3M



Engineered for comfort

- › New braided headbands for enhanced durability
- › Colour coded for easy identification (blue for FFP2, red for FFP3)
- › 3-panel flat-fold design

Model	EN 149+A1 Classification	Exhalation Valve	Assigned Protection Factor (APF)*
9320+	FFP2 NR D	Unvalved	10
9322+	FFP2 NR D	Valved	10
9330+	FFP3 NR D	Unvalved	20
9332+	FFP3 NR D	Valved	20

*Please refer to HSE document HSG53 for more information

Potential applications

API Production:

- › Chemical synthesis reaction
- › Fermentation
- › Extraction

Solid and Liquid Pharma Production:

- › Mixing and Granulation
- › Packaging

Cleaning and Maintenance

- › Reprocessing equipment



More information:
www.3M.co.uk/auragen3



The New Standard in Intrinsically Safe Respiratory Protection.

3M™ Versaflo™ Intrinsically Safe Powered Air Respirator TR-800 Series

Intrinsically Safe (IS) Powered Air Turbo and Battery TR-800 Series are ATEX Certified for use in potentially explosive atmospheres whilst offering the comfort, modularity, control and ease of use expected from the 3M™ Versaflo™ platform.

The IS TR-800 Series is approved to Zone 0 requirements and so may be suitable for areas where potentially explosive atmospheres are expected and permanent in normal operations. As part of the 3M Versaflo family, when the IS TR-800 Series is combined with Versaflo headtops, belts, and other accessories, it becomes part of a CE-approved respirator system featuring: multiple speeds, audible and visual alarms and the ability to work with a wide variety of gas, vapour and particulate filters.

Features and Benefits



Comfortable airflow

- › Three user selectable flow rates to maximise comfort
- › Controlled airflow delivers steady flow as battery discharges or filter loads with particulates

Ease of use

- › IS TR-800 Series display shows battery charge status and particulate filter loading status during use
- › Battery charge indicator
- › Charge status is also indicated by a useful LED display on the battery



- › No user calibration of turbo required
- › Electronic audible and visual alarm in case of low battery and/or low air flow



Easy identification

- › Bright yellow touchpoints to differentiate from non-IS versions of 3M™ Versaflo™ Product Family

Battery protection

- › Battery features bumpers to help absorb impacts



Secure battery attachment

- › Mechanical attachment of battery to help prevent battery removal and spark risk during use per EN 60079-11

Motor/Blower Safety

- › Non-Mining Gas atmospheres (Group II)
EN 60079-11 Ex ia IIB T4 Ga
 - ia – intrinsic safety for Equipment protection level Ga
 - IIB – Gas apparatus group
 - T4 – Max. surface temperature 135°C (-20°C ≤ Ta ≤ 55°C)
- › Non-Mining Dust atmospheres (Group III)
EN 60079-11 Ex ia IIIC 135°C Da
 - ia – intrinsic safety for Equipment protection level Da
 - IIIC – Dust apparatus group
 - 135°C – Max surface temperature 135°C (-20°C ≤ Ta ≤ 55°C)

A truly global respirator platform

- › The IS TR-800 Series will be launched globally, which gives multinational customers the option to standardise on one product platform with both NIOSH and CE versions available

Potential applications

API Production:

- › Chemical synthesis reaction
- › Fermentation
- › Extraction

Solid and Liquid Pharma Production:

- › Mixing and Granulation
- › Packaging

Cleaning and Maintenance

- › Reprocessing equipment



Find all of the parts and accessories available with the TR-800.



More information:
www.3M.co.uk/versaflo800



Breathing made easier.

3M™ Maintenance-Free Reusable Half Mask, 4000+ Series

Engineered for improved breathing ease, this evolution of 3M's most popular maintenance-free reusable half mask is convenient to use, reassuringly reliable and now offers measurable improvements in comfort.

4 versions available, each offering effective protection against differing hazards in the workplace: FFA1P2 R D, FFA2P3 R D, FFABE1P3 R D, FFABEK1P3 R D

Features and Benefits

Breathing comfort

- › New enhanced exhalation valve assembly reduces breathing resistance by over 30%*
- › Proven to consistently exceed CE standard requirements for breathing ease

Convenient to use

- › Ready-to-use, maintenance-free construction with integrated filters
- › Designed to suit many eyewear and hearing protection models from 3M
- › Resealable bag provides convenient and clean storage between uses



Wear comfort

- › Soft and flexible face seal
- › Lightweight and well-balanced mask
- › Low-profile and ergonomic design for optimal field of vision
- › Easily adjustable straps for secure, comfortable fit

Proven reliability

- › First choice of 3M reusable respirator across Europe since its introduction over 25 years ago
- › Proven to consistently exceed minimum standards for filter service life

Overspray Guard

- › 3M™ Overspray Guard 400+ is available to help prolong the life of the particulate filters



* Exhalation breathing resistance of 3M™ 4000+ reduced by >30% for 120 lpm peak exhalation flow and >35 % for 160 lpm compared to 3M™ 4000 Series. Results measured by 3M in 2017 under laboratory conditions. Breathing rates shown as an example only.



More information:
www.3M.co.uk/4000plus

Potential applications

API Production:

- › Chemical synthesis reaction
- › Fermentation
- › Extraction

Solid and Liquid Pharma Production:

- › Mixing and Granulation
- › Packaging

Cleaning and Maintenance

- › Reprocessing equipment



Secure Fit. Without Feeling Tight.

**3M™ SecureFit™ SF200 with
the 3M™ Scotchgard™ Anti-Fog (SGAF)**

**Innovative design with 3M™ Pressure Diffusion Temple Technology
promotes improved comfort and security of fit combined with
3M™ Scotchgard™ for added protection against fogging and scratching.**

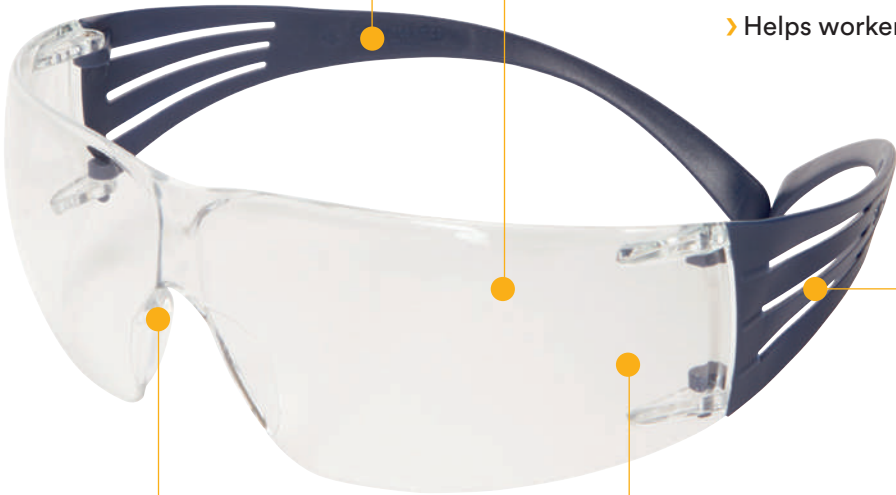
Features and Benefits



Lightweight design (18g)

Scotchgard™ Anti-Fog Coating

- › Resists fogging longer than traditional anti-fog coatings, up to 25 washings with water
- › Helps workers see clearly for longer



Molded nose bridge

Polycarbonate lenses

- › Absorb 99.9% UVA and UVB rays
- › Meets the requirements of EN 166:2001

3M™ Pressure Diffusion Temple Technology

- › Helps diffuse pressure over the ear for a secure and comfortable fit

* 3M internal testing per EN 168 test method when compared with traditional anti-fog coatings.

Product ID	Lens	Temple Colours	Intended Use
SF201SGAF-EU	Clear	Blue	3M™ Scotchgard™ for added protection against fogging and scratching (EN 166 Anti-Fog (N) and Anti-Scratch (K))



More information:
www.3M.co.uk/securefit

Potential applications

- › This product may be suitable for a wide variety of pharma applications where impact protection, visual clarity and comfort are essential.



Designed to perform.

3M™ GoggleGear™ 500 Series Safety Goggles

The new member of 3M™ GG500 Product Family GG501NSGAF –
Clear Scotchgard™ Anti-Fog Lens suitable for autoclave applications
with its neoprene strap.

Features and Benefits



Protection

- › Offers protection against liquid splashes and large dust particles

Scotchgard™ Anti-Fog Coating

- › Providing protection against fogging and scratching (even after multiple washes), meeting K and N marking requirements of EN 166



Design

- › Low profile goggle design with indirect ventilation

Sterilisation by autoclaving

- › Blue frame with adjustable neoprene headband can be autoclaved for use in cleanroom environments

- › Sterilisation by autoclaving – internal testing has been carried out on GG501NSGAF-EU samples subjected to 10x, 20x, 30x and 40x automatic cleaning and disinfection and sterilisation by autoclaving at 121°C.
- › Testing was then carried out on the following properties:
 - mechanical performance (BT)
 - the anti-fog properties (K)
 - the anti-scratch properties (N)
 - optical performance (Class 1)

Based on the internal testing the claims remain valid

Optional prescription insert

Product ID	Lens	Marking
GG501NSGAF-EU	2C-1.2 3M 1 BT KN	3M EN166 3 4 BT CE



More information:



Potential applications

- › This product may be suitable for use in a wide variety of pharma applications including cleanrooms.



Confined Spaces. Get in Easily. Get out Safely.

The pharmaceutical and biotech industries are diverse and complicated. The range of possible confined spaces is also extensive: from storage rooms to reactor vessels – the complexity of confined spaces also varies.

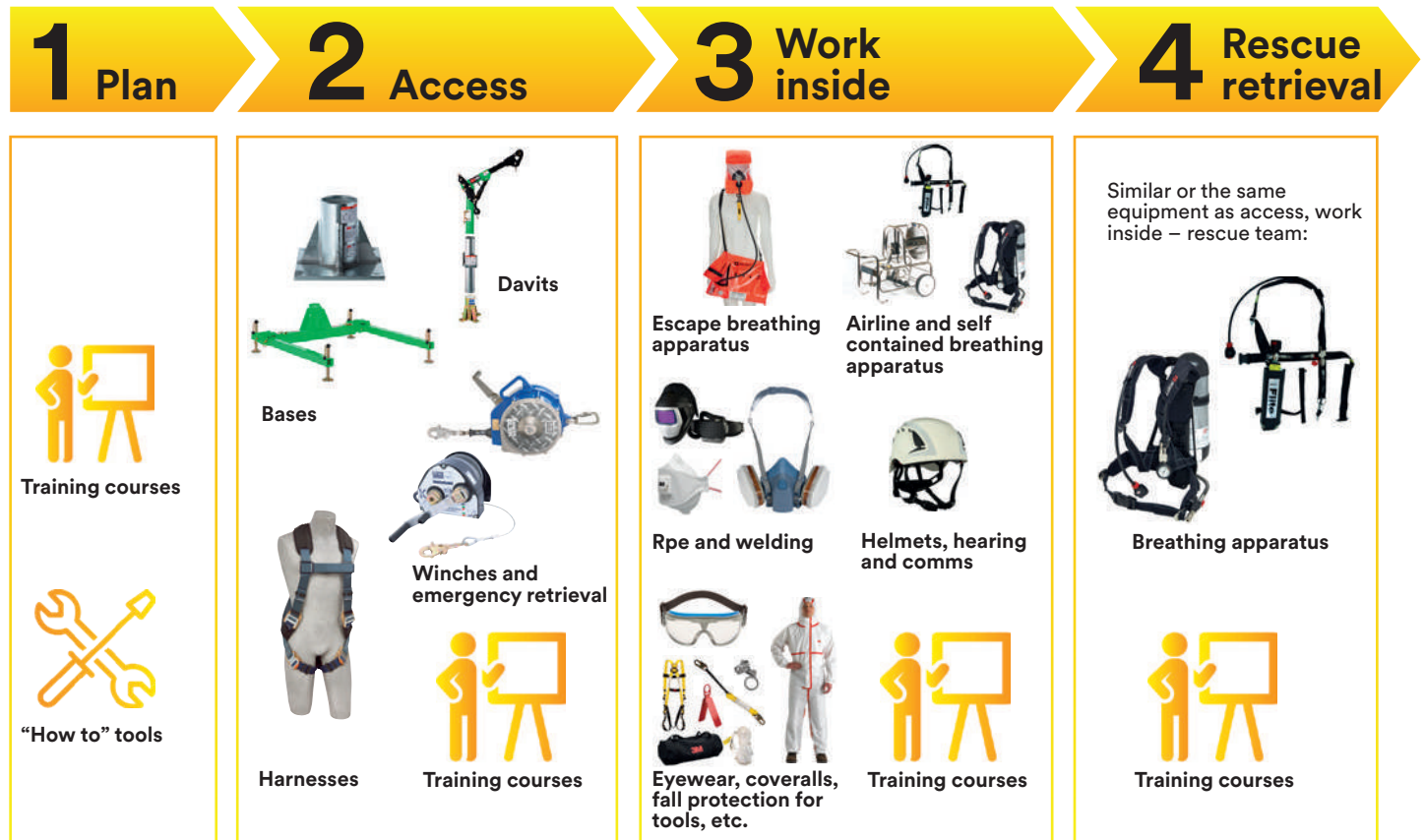
3M offers a comprehensive range of solutions for workers in confined spaces – from breathing apparatus to personal protective equipment, entry and retrieval systems.

Confined spaces are partially or fully enclosed spaces that meet all of the following criteria:

- › Large enough for workers to enter and perform certain jobs
- › Limited or restricted means for entry or exit
- › Not designed for continuous occupancy

The range of possible confined spaces is also extensive. Type, size and hazards vary greatly, along with different standards, regulations and company policies that can apply to each working environment.

3M can help you to successfully plan and manage your confined spaces!



Example confined spaces in pharmaceuticals

Pharmaceutical Production Vessels:

- › Active Pharmaceutical Ingredient (API) production: reactor vessels
- › Biotech: process systems, fermentation vessels and purification systems
- › Proportioning: containment rooms, HVAC systems
- › Mixing and granulation: large sifters, granulators and blending equipment
- › Liquid processes: storage and mixing tanks, filter presses
- › Tablet and pellet coating: mixing and coating drums

Pharmaceutical Routine Operations

- › Entry for maintenance and cleaning operations; air handlers, ductwork, manholes, vaults and pits
- › Onsite waste water treatment facility



More information:
www.3M.co.uk/confinedspace

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