

Hazwoper (Hazardous Waste Operations Emergency Response) & Hazmat (Hazardous Materials)



GlowMark The Colour Coded Glows In The Dark Tactical safety Marker System..

Contents of areas covered..

1. Hazard Communication
2. Health and Safety Terminology
3. Hazard Recognition and Avoidance
4. Vehicle Safety/Heavy Equipment Hazards
5. Labels and Signs for Hazardous Materials
6. Emergency Response Plan
7. Confined working Spaces

These three main points are paramount to ensuring safe working compliances and practices in commercial and industrial working environments where hazardous chemicals & materials are present..

- Review important Health and Safety topics
- Remind ourselves of proper procedures
- Learn from past experiences

Safe Working Practices and Scope of.. “HAZWOPER”

Who is covered?

- All employees working on site exposed to hazardous substances, health hazards, or safety hazards
- Supervisors and management responsible for the working site and areas where employees are working

Hazard Communication & Identifications..

Hazard Communication..

- Purpose: Safety awareness when working with hazardous chemicals
- You have the **RIGHT TO KNOW** about work place hazardous chemicals that you use
- Also known as Chemical Hazard Awareness
- Chemical manufacturer requirements
- Determine hazards of chemicals
- Provide labels and Material Safety and Data Sheets (MSDS)

Employee Safe Working Practice Requirements..

- Read and follow labels and safety markings and MSDS Requirements
- Follow company employer safety instructions, warnings and safe working practice compliances
- Know and identify potential hazards and risks before starting a job

At all times remember...**Safety is primarily YOUR responsibility!**

MSDS Requirements..

- 1. Manufacturers name & contact information
 - 2. Hazardous Ingredients/Hazard Identity Labeling & Information
 - 3. Know Physical/Chemical Characteristics & Hazard level
 - 4. Know & Understand Fire & Explosion Hazard Data
 - 5. Know & Understand Reactivity Data
 - 6. Know & Understand Health Hazard Data
 - 7. Know & Understand Precautions For Safe Handling & Use
 - 8. Know & Understand Control Measures
- **NOTE:** Format Is **NOT** Standardized

Hazard Recognition and Avoidance..

Hazard Recognition..

- Responsible Working Practices
- Proper Training
- Job Hazard Analysis (JHA)
- Safety Planning
- Practical Work & Safety Training Experience
- Common Sense
- Think & Evaluate Before Acting
- Use Your Senses: Primarily Sight & Hearing..(Avoid, Smell, Touch and Taste, Chemicals are Harmful when inhaled, come into contact with the skin or when ingested)

Important To Remember.. COMPASS

Container Shape

Occupancy/Location

Marking/Colors

Placards/Labels

Assume Hazardous Materials

Shipping Papers and Documents

Senses

HAZARD LEVELS TO OBSERVE

LOWEST



HIGHEST

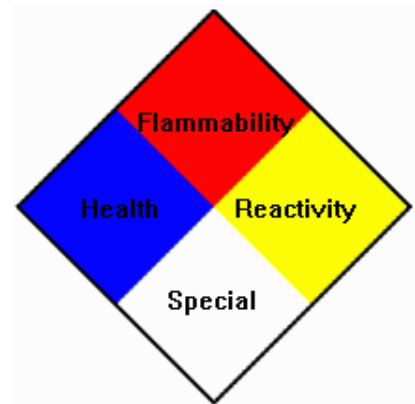
Colour Coded Safety Compliant Identification Markings..

- Markings



- National Fire Protection Agency 704 Labels

- Colour Identification Of Container (Compressed Gases)



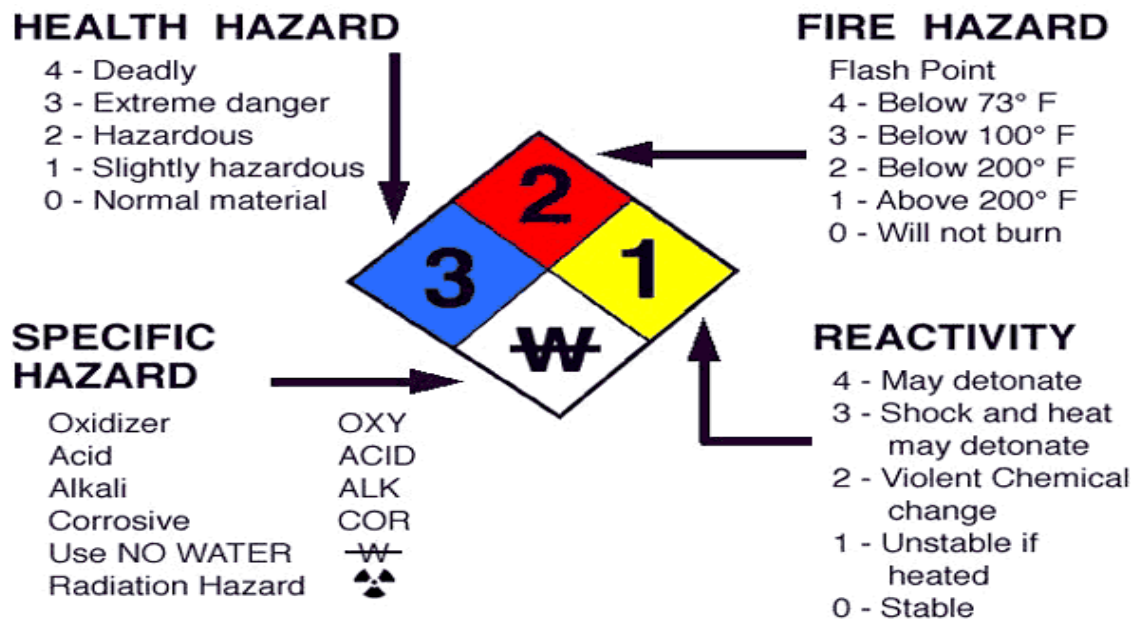
Please Note: This is the reason why we have designed GlowMark Arrow Base Rims with a 5 Colour Options. GlowMarks low cost and simple colour identification also applies to many other safety areas we will cover and mention at later points within this report.



The Chart Below Shows and Explains The Different Levels Of Health Hazard, Fire Hazard, Specific Hazard & Reactivity Of Compressed Gases used by National Fire Protection Agencies worldwide..

Colour coding is a very Simple and Effective Way to Safely identify high level hazards this is its reason for use!

GlowMark Arrows can be fixed permanently or temporarily to any surface or item and they are Fire retardant up to 170 ° Fahrenheit



Compressed Gas Manufacturers and Suppliers have provided the following information..

The paragraph below shows suggested standards for colour coding of cylinders containing gases

- Air = **Yellow**
- Cyclopropane = **Orange**
- Ethylene = **Red**
- Oxygen = **Green**
- Nitrous oxide = **Blue**
- Currently this is a Non Mandatory System Placards & Labels..

• Department of Transport (DOT) Specifies HAZMAT Labeling & Placarding as per the Emergency response guidebook (ERG)

Placards are required by law to be on:

- Tanker Trucks
- Road Freight Trailer's
- Railway Tanker Cars (Bulk) & labels on small containers (Non Bulk)



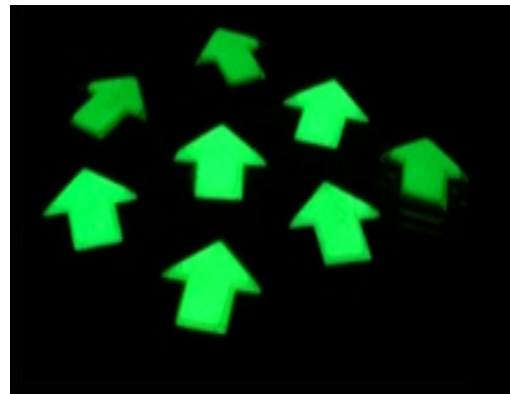
GlowMark Arrows with 3M Diamond Grade Reflective Tape Base Rims provide a low cost and simple solution..

GlowMark technology has a dual aspect built in safety factor which is automatically self-activated as soon as it becomes dark. Both in the dark or in bad visibility low lit weather conditions, the visible green glow of GlowMark Arrows can be seen with the average human eye from a distance of 30 meters ahead.

Daytime Photo..



Night-time Photo..



Ministry of Transport restrictions for heavy goods vehicles and vehicles carrying hazardous loads such as flammable combustible gases..

The Following paragraph explains How GlowMark colour coding identifies hazardous vehicle classifications at a glance..

Please note: (Ministry of Transport and law enforcing traffic police officers are handing out heavy fines when vehicle speed limitation laws and regulations are broken and are not abided to by vehicle drivers).

GlowMark colour coding providing vehicle identification for police at a glance..

GlowMark Arrows colour coded marker system will also be highly visible to police vehicle drivers, who will at a glance be able to see the GlowMark safety marker fixed in place on the rear end of a

moving truck or lorry; this will further enable traffic police to identify at a glance, the type, class and hazard level the vehicle and the goods or load it will be carrying. This concept is visibly faster and easier for police to see than the coded logos and numbers that are currently place and that are being used at the rear of trucks and goods vehicles for these purposes.

Recent changes in Ministry of Transport legislation to raise safety and awareness of heavy goods vehicles on public roads in the UK, EU & America..

Recent changes in road traffic and highways legislations enforced by the Ministry of Transport now state that all heavy goods vehicles should now carry a reflective marker at the rear and on the sides of the vehicle to help make it more visible and hopefully reducing the risks of collisions from other drivers who may be passing or to identify when dangerous cargo's may be on-board the vehicle. At times these types of vehicles may also be parked in a dark or low lit area such as the hard shoulder or the safety exit lane on a motorway where it may not be clearly visible to faster moving advancing drivers. Emergency escape lanes are also provided for vehicles that need to pull off a road in an emergency. These escape lanes are often unlit and very dark. When a vehicle breaks down or has an accident during hours of darkness and low visibility where there may also be fog or heavy rain, the bad weather conditions can also increase a higher risk level of a collision or impact taking place from another advancing vehicle because the advancing driver may not see the parked truck or lorry until it is too late to break or to stop avoiding a collision.

Please note: (GlowMark technology can also been seen through fog and smoke, making it an ideal safety solution for all weather conditions)..

How GlowMark Arrows will provide a low cost effective solution for these new safety concerns

By applying our low cost easy to install GlowMark Arrows to all goods vehicles at the rear and the sides the Ministry of Transport can utilize our colour coding system which will clearly indicate the vehicle hazard levels.

GlowMark colour coding system will also help to enable motorway and traffic police officers to identify the different speed limitations of different vehicle classifications and can enable them to warn the driver to reduce his speed and velocity if he is traveling too fast. And finally more importantly, the colour coding will enable police officers to rapidly identify the hazardous level of cargo. The visible impact GlowMark Arrow markers will have once they are fixed and placed at the sides and the rear of the vehicle will additionally help show police officers and other vehicle drivers if a truck or lorry has stopped, broken down or has been involved in an accident, instantly providing a highly visible warning to advancing drivers.

Accidents Taking Place..

After an accident has happened, this will enable the police officers to radio ahead with one single call identifying at a glance the level of hazardous goods the vehicle is carrying, allowing them to relay and provide fast simple information identifying the level of backup from response support teams that will be needed. It is also critical and sometimes crucial to the survival of vehicle occupants and other road users who have been involved in a traffic accident that they are attended to as fast as possible. We believe that our concept will help save valuable time and lives.

Always Assume Unknown Hazards Exist..

- **Unknown contamination means a non-hazardous task can become a hazardous task**
- **HAZMAT Is Everywhere..**
- **Home,Office, Field, Commercial/Industrial & Public Locations**

Types Of Hazards..

- **Five Main Hazard Types**
- **Chemical**



- **Fire & Explosion**



- **Radiological**



- **Biological**



- **Physical**



Physical Hazards Include...

- **Slip, Trip & Falling**
- **Sharp Objects**
- **Low Light**
- **Electrical & Power Failure**

- **Noise**
- **Oxygen Deficiency**
- **Temperature Extremes**
- **Power Tools**
- **Vibration**

NOTE: Using & installing GlowMark will definitely greatly reduce the likelihood of accidents taking place from slipping, tripping and falling over in low light areas and especially if there is a power blackout that is caused by an electrical power failure, power is cut off for safety preventions when there is a fire or an incident, so to be able to see where you are walking to a fire evacuation point and exit we believe is a huge potential life saver. GlowMark is a guaranteed fail save device that automatically activates and is visible as soon as there is low light or darkness.

Work Site Safety plans..

- **Define and implement safety measures and protocols for protecting workers from site hazards associated with safe working practices**
- **Provide information to all workers about hazards and establish site safety health polices and procedures to prevent accidents taking place**
- **Produce a working document to address hazards and changing conditions with your companies health and safety officer**
- **Safety in practice working plans Must be developed BEFORE site activities continue and proceed**

It Is Always Better To Be Safe Than Sorry..



Emergency Response Actions..

- **Step 1. Protection Priorities**
First: Protect Yourself

Second: Protect The Public

Third: Protect Environment

Fourth: Protect Property

• Step 2. Make Notifications

Facility

Employer

Local, State, Federal

More ER Actions..

• Step 3. Isolate The Incident

• Step 4. Perform Actions If properly Trained

• Step 5. Integrate Into Incident Command (If properly Trained)

GlowMark Tactical Safety Marker System will definitely aid and assist First Response Teams when entering a building or structure as well as assisting the occupants when evacuating..(Please read additional supporting reports and documents that are provided and which explain these safety advantages and real time testing that has been carried out by our company and our network partners)

Confined Spaces..

There are Two Types of Confined Spaces

- Permit Required Confined Space**
- Non-Permit Required Confined Space**



Permit Required Confined Space..

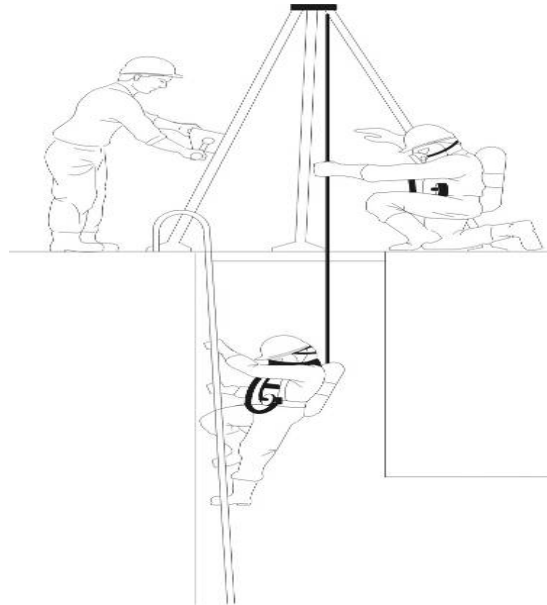
- Contains or has a potential to contain a hazardous atmosphere**
- Contains a material with the potential for engulfment of the entrant**
- Has an internal configuration such that an entrant could be trapped or asphyxiated**

Non-Permit Required Confined Space..

- Does Not contain hazards capable of causing death or serious harm to entrant
- Does Not contain atmospheric hazards which cannot be maintained at safe levels with engineering such as ventilation

Confined Space Entry Team..

- The confined space entry team should consist of at least 3 members
- Authorized entrant
- Attendant
- Entry Supervisor



Often confined spaces have an entry ladder to enable entrants to descend into for example underground tunnels and facilities which often house pipes and tubes, electrical and telecoms cabling and ducting and which in most cases are dimly lit or sometimes which have no lighting at all. Therefore a helmet lamp and a tactical flashlight are all the entrants who are working in these hazardous areas have to see and find their way throughout underground tunnels which can be a labyrinth as in sewers and other confined underground areas.

The entry ladders, pipes, tubes, cabling and ducting will definitely benefit from GlowMark being used and applied within these dangerous working conditions as a visual guide marker enabling the workers to see where they are going and also to help them to identify different hazard levels as we have mentioned they will be working on.

Conclusion: GlowMark products provide many highly effective safety concepts and solutions which will bridge many gaps in safety awareness within these noted areas, with the simple multi-use multi-applications that will benefit from GlowMark innovative and 100% self sustainable technology. ©

For further information about GlowMark please view our Website: <http://www.glowmark.net>

Thank you for your co-operation.

GlowMark is part of Synergymc2 Limited UK Companies House Registration Number 9382795

