



**GEOPHYSICS FOR  
ARCHAEOLOGY &  
ENGINEERING**

**WRITTEN SCHEME OF INVESTIGATION  
& RISK ASSESSMENT METHOD STATEMENTS  
FOR GEOPHYSICAL SURVEY**

**Land at Church Raike, Chipping,  
Lancashire**

**Client  
Orion Heritage Ltd**

**Ref. No.  
14028**

**Date  
November 2018**

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## TABLE OF CONTENTS

- 1 INTRODUCTION, SITE LOCATION AND DESCRIPTION
  - 2 SURVEY OBJECTIVES & SELECTION OF GEOPHYSICAL TECHNIQUE
  - 3 CRITERIA FOR SELECTION OF THE GEOPHYSICAL METHOD
  - 4 SITE WORK METHODOLOGY
  - 5 REPORTING AND ARCHIVING
  - 6 STAFFING
  - 7 WORKING PRACTICES AND STANDARDS
  - 8 HEALTH AND SAFETY
  - 9 INSURANCES
- Appendix A STANDARD RISK ASSESSMENT
- Appendix B COSHH Documents

### Surveyors:

|  |           |
|--|-----------|
|  | Signature |
|  | Signature |
|  | Signature |
|  | Signature |

| Prepared By | Signature | Date | Approved By | Signature | Date |
|-------------|-----------|------|-------------|-----------|------|
|             |           |      |             |           |      |
|             |           |      |             |           |      |

## **1 INTRODUCTION, SITE LOCATION**

- 1.1 **SUMO Geophysics Ltd** on behalf of **SUMO Services Ltd** has been contracted to carry out a geophysical survey.
- 1.2 This survey forms part of the programme of pre-determination archaeological works required by the County Archaeologist relating to a planning application.
- 1.3 The site consists of 0.7ha at Church Raike, Chipping, Lancashire PR3 2QQ NGR SD 618 435 (See Figure 1)
- 1.4 The site work will take place on 26 November 2018.
- 1.5 Preliminary results will be available within a couple of days after completion of fieldwork.
- 1.6 Final report is typically available 2 weeks after completion of fieldwork.

## **2 SURVEY OBJECTIVE**

- 2.1 To determine the presence/absence of archaeological features. The results of the survey will inform the requirement and scope for further archaeological investigation.

## **3 CRITERIA FOR THE SELECTION OF THE GEOPHYSICAL METHOD**

- 3.1 Bedrock. geology: Park Style Limestone Member – limestone. Superficial deposits – Till, Devensian – Diamicton (BGS 2018).
- 3.2 Archaeology: the Archaeological Desk Based Assessment and any other archaeological background supplied will be consulted. The historic mapping if relevant will be referenced in the report
- 3.3 Detailed magnetic survey has been selected as the most suitable technique for this site as it can detect a wide range of features including pits, ditches, land boundaries and agricultural features. It is also fast and more suited to prospection over large survey areas

There are no Scheduled Monuments on the site thus Scheduled Monument Consent is not required.

## 4 SITE METHODOLOGY

- 4.1 A temporary grid system will be established over the site and marked out using wooden pegs or canes. The location of the grid will be set out using a RTK GPS system theoretically accurate to some 0.01m and referenced to OS co-ordinates.
- 4.2. **Hand Held:** Data will be collected using a Bartington Grad 601-2. The instrument consists of two paired sensors (see below) and readings are logged at 0.25m centres along traverses 1.0m apart across 30m grids. The collection of data at 0.25m centres provides an appropriate methodology balancing cost and time with resolution as per Historic England guidelines.
- 4.3 **Sensors:** Two sensors mounted 1m vertically apart and very accurately aligned to nullify the effects of the earth's magnetic field. Readings relate to the difference in localised magnetic anomalies compared with the general magnetic background
- 4.4 The readings are logged consecutively into the data logger which in turn is daily downloaded into a portable computer whilst on site. At the end of each job, data are transferred to the office for processing and presentation.

## 5 REPORTING AND ARCHIVING

- 5.1 The report for the survey will comprise a written section describing the background to the survey, the methodologies used and a discussion of the results. The text will be illustrated using plots of the results using CAD to overlay the results and interpretations over the base mapping. The format for these drawings will either be A3 or A1 depending on the size and configuration of the survey areas.
- 5.2 Processing of the data will be carried out using the specialist software **Anomaly** and **GeoSub**, sometimes **Geoplot**. This can emphasise various aspects contained within the data but which are often not easily seen in the raw data. Basic processing of the magnetic data involves 'equalising' the background levels with respect to adjacent traverses (Zero mean traverse). 'Despiking' is very occasionally performed to remove the anomalies resulting from small iron objects often found on agricultural land but this practice is not favoured as it creates a 'false' dataset. Once the basic processing has levelled the background it is then possible to carry out further processing including de-stagger and interpolation to emphasise the archaeological or man-made anomalies.
- 5.3 The presentation of the CAD drawings will include:
- a general location plan
  - detailed site location showing the grid position
  - grey scale plots of the minimally processed and processed data
  - Interpretation plot showing anomalies identified
- 5.4 As a minimum the report will contain;
- Non-technical summary
  - Introductory statement
  - Aims and purposes of the evaluation
  - Methodology
  - Results, including a confidence rating for the results and their interpretation
  - Conclusion
  - Plans/plots, including interpretive plans of the results

- References

- 5.5 The archaeological DBA, if provided, will be consulted, along with historic mapping of the survey area to inform the interpretation of anomalies located during the survey. The degree of uncertainty pertaining to influences drawn from the results will also be discussed.
- 5.6 The full report will be uploaded to the OASIS database with a 12 month release delay unless informed otherwise.

## 6 STAFFING

- 6.1 Site work will be carried out by an appropriate number of field teams (led by an Experienced Team Leader) to complete the work within the given timescale. The Team will be co-ordinated from designated offices personnel, where the first point of contact for the client and site team will be:

Bradford Office      Jon Tanner      01274 835016      [jon.tanner@sumoservices.com](mailto:jon.tanner@sumoservices.com)

Team Leader      TBC

## 7 WORKING PRACTICES AND STANDARDS

- 7.1 All site work and reporting will be carried out in accordance with the latest guidance documents issued by Historic England (EH 2008) (then English Heritage), the Chartered Institute for Archaeologists (Cifa 2014), the European Archaeological Council (EAC 2016)
- 7.2 **SUMO Geophysics Limited** is a **Registered Organisation** and as such is committed to upholding the standards and policies set out by the **Chartered Institute for Archaeologists**.
- 7.3 **SUMO Geophysics Ltd** (through its parent company **SUMO Services Ltd**) is a member of the **EuroGPR Association**

## 8 HEALTH AND SAFETY

- 8.1 Colin Carnachan, Company Secretary is the responsible post holder for Health & Safety matters; **SUMO** also employ an external Health & Safety advisor who can be consulted if necessary.
- 8.2 All **SUMO** team leaders are first-aid trained, with all our field operatives part of a rolling programme of first-aid training.
- 8.3 All **SUMO** field teams are equipped with mobile phones for use in an emergency.
- 8.4 In the event of an emergency the team will immediately stop work and report the incident to the relevant emergency services and **SUMO** head office. It is safe to do so they will administer first-aid and render assistance to any emergency teams on site.
- 8.5 **SUMO** will monitor the general safety arrangements and will communicate any further requirements / short falls to the client.
- 8.6 **SUMO** site personnel will be equipped with full Personal Protective Equipment (PPE).

8.7 In the event of an Accident: all **SUMO** site operatives are trained to Appointed Persons standard and all vehicles carry first aid kits. In the event of a serious injury/accident dial 999.

8.8 In case of minor injury the closest **A & E Hospital** – see Figure 2

8.9 **Welfare Facilities** – see Figure 3

#### 8.10 **Emergency Contacts**

In the event of an accident staff to report in accordance with Sumo Ltd's Health and Safety Policy and in accordance with RIDDOR.

| <b>Name</b>     | <b>Company</b>      | <b>Role</b>         | <b>Telephone</b> |
|-----------------|---------------------|---------------------|------------------|
| Colin Carnachan | SUMO Services Ltd   | Managing Director   | 02392 415020     |
| Jon Tanner      | SUMO Geophysics Ltd | Project Manager     | 01274 835016     |
| Rob Smith       | Orion Heritage      | Client              | 0161 457 0291    |
| TBC             | SUMO Geophysics Ltd | On site Team Leader |                  |

## 9 **INSURANCES**

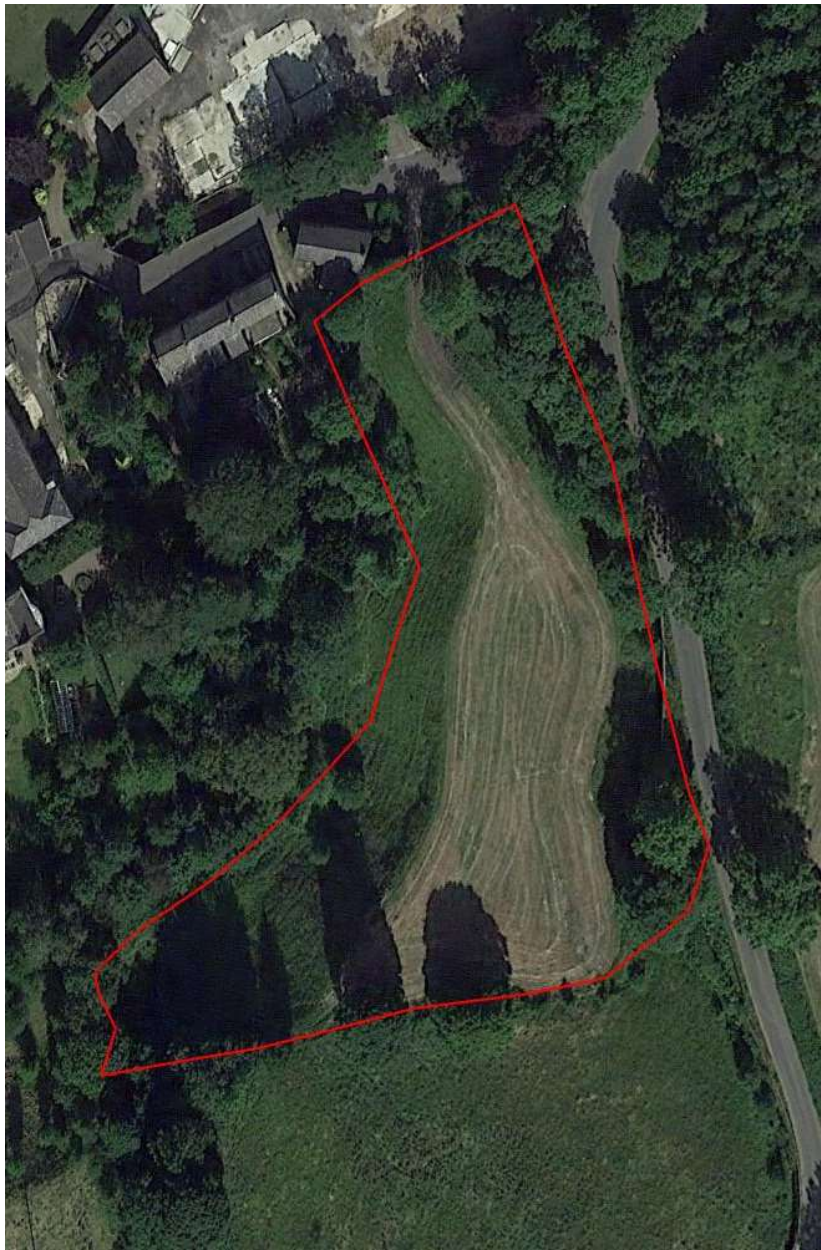
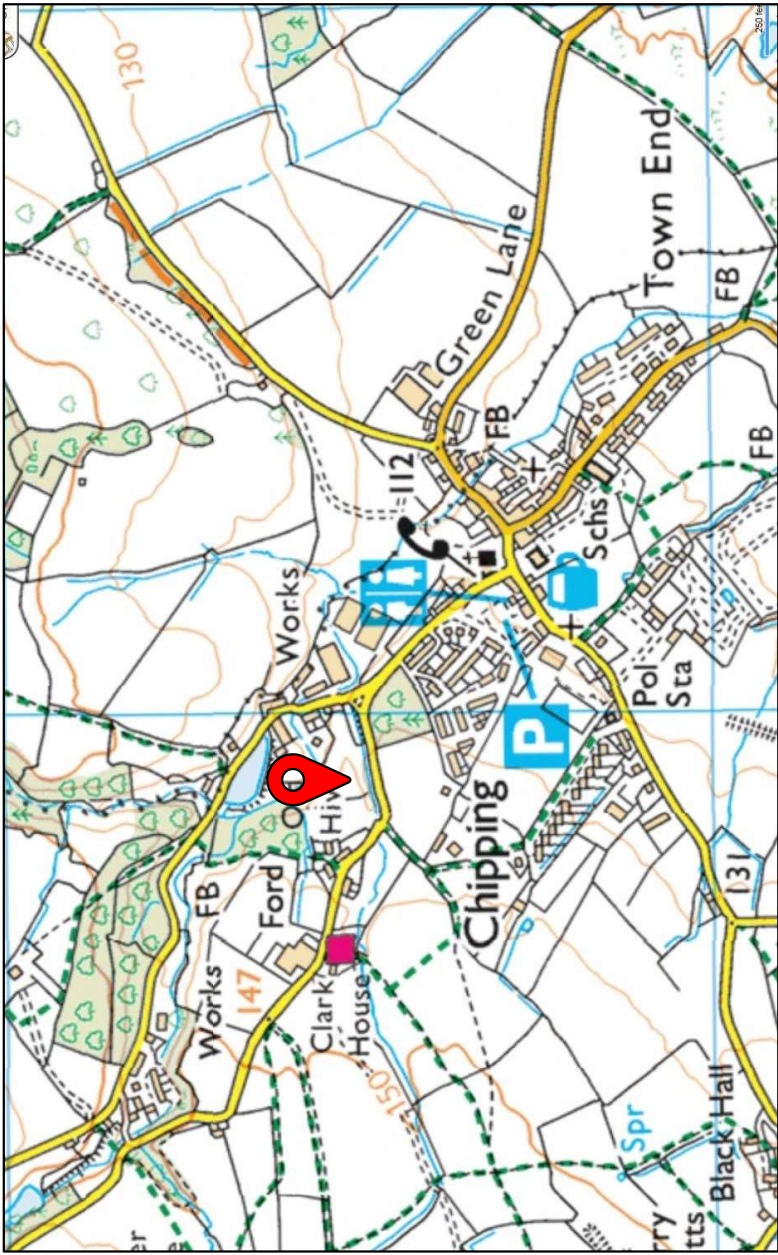
9.1 **SUMO** carry a limit of £10 million Employers liability insurance.

9.2 **SUMO** carry a limit of £10 million Public liability insurance and Products liability insurance.

9.3 **SUMO** carry a limit of £10 million Professional Indemnity insurance

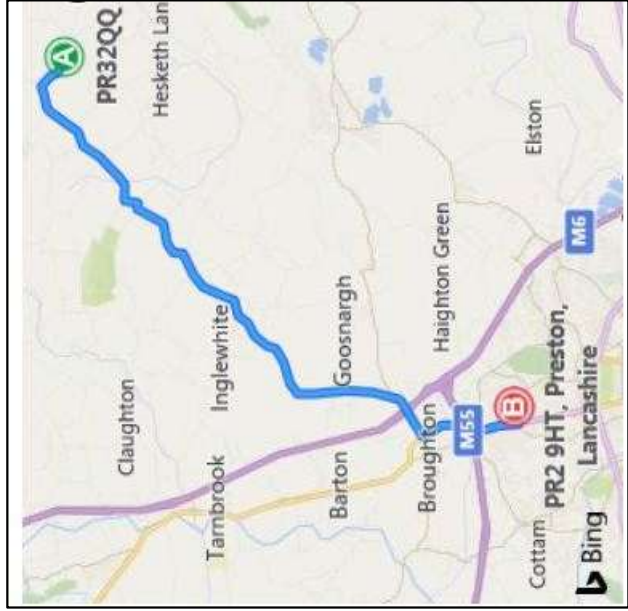
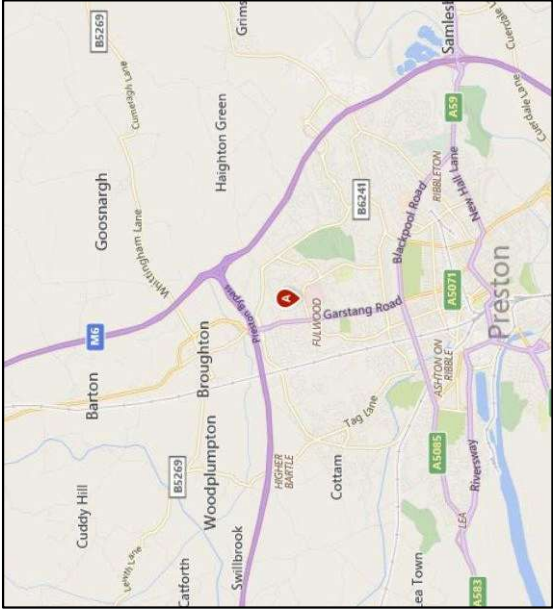


Figure 1  
Site Location



**Figure 2**  
**Nearest Hospital**

Royal Preston Hospital, Sharoe Green lane North, Fulwood,Preston PR2 9HT 01772 716565



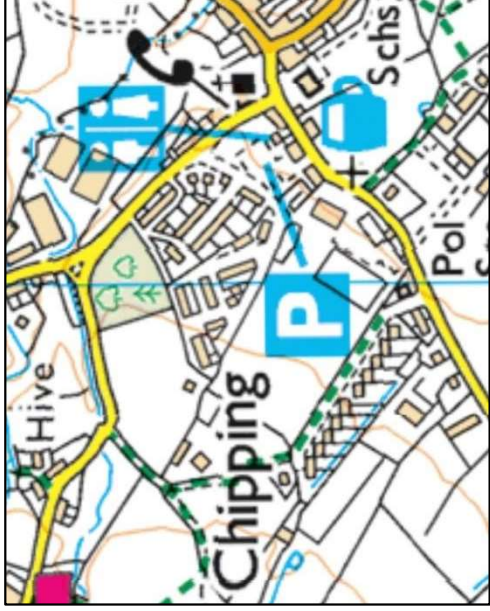


**Figure 3**  
**Welfare Facilities**

Surveyors will use client site facilities only with prior permission. In the event that welfare facilities are not available at the site, then staff will use local public amenities.

Hand gel / wipes / water carrier for hand washing at remote locations must be carried at all time. The team Leader is responsible for re-stocking these when away from the office.

The closest public amenities are at Club Lane / Church Raikie, Chipping.



## Appendix A – STANDARD RISK ASSESSMENT

| Activity  | Hazard   | Persons at Risk                       | Uncontrolled Risk |   |    | Control Measures  | Residual Risk |   |   |
|---|--|---------------------------------------|-------------------|---|----|---|---------------|---|---|
|   |  |                                       | P                 | S | R  |   | P             | S | R |
| Driving   | Road traffic accident, injury to personnel.                              | Driver, passengers, other road users. | 2                 | 4 | 8  | Close all doors before moving vehicle. Do not drive tired or unwell. Swap driver if you feel tired or unwell. Drivers cannot answer phones – even hands free. When destination is reached park vehicle off main road, preferably along access track or inside field gate.<br>If not possible then wear high visibility jackets when attending vehicle. Do not park vans near slopes / ditches because of risk of falls into and out of van.   | 1             | 4 | 4 |
| Freeing stuck or broken down vehicles.            | Muscular / skeletal injuries from pushing vehicles                       | Driver, passengers, other road users. | 1                 | 3 | 6  | Close all doors and secure vehicle payload before attempting to move vehicle. Never pull vehicle towards you. Check for other live traffic, wear high visibility jacket.  | 1             | 3 | 6 |
| Setting out survey grids                          | Tripping caused by tapes /ropes /cables                                  | Site staff                            | 4                 | 1 | 4  | Keep site tidy and clear trip hazards when no longer in use. Mark hazards with cones.   | 3             | 1 | 3 |
| Setting out survey grids                          | Inserting pegs   | Site staff                            | 1                 | 2 | 2  | Wear gloves.  | 1             | 2 | 2 |
| Cart survey Unloading / Loading cart from vehicle | Muscular / skeletal injuries from moving equipment and incorrect lifting | Site Staff                            | 3                 | 4 | 12 | Always work in pairs, remove all loose items from the van before moving cart out of/ into van. Lift with knees, do not step out of van while lifting cart. Ensure area outside rear of van is clear and free from holes in ground or other hazards. Avoid loading unloading on a slope or beside / on the edge of a road  | 3             | 3 | 9 |
| Cart survey Lifting over gate or fence            | Muscular / skeletal injuries from moving equipment and incorrect lifting | Site Staff                            | 3                 | 4 | 12 | Avoid if possible. Pass over gates/fences in pieces and construct in the field. Do not lift a fully constructed cart over fences or gates that are above waist height. Lift with knees. Work in pairs across the fence in order to keep weight close to the body whilst lifting.  | 3             | 3 | 9 |
| Cart survey Setting-up instrument                 | Muscular / skeletal injuries from moving equipment                       | Site Staff                            | 3                 | 4 | 12 | Always work in pairs, use remote buttons, lift with legs, and communicate lift. Stop if difficulty encountered. Perform over good ground conditions. Only turn over when changing sites or significant drift has occurred and is not rectified by initial setup.  | 2             | 3 | 6 |
| Cart survey Surveying                             | Muscular / skeletal injuries from moving equipment                       | Site Staff                            | 3                 | 3 | 9  | Wear gloves if hand strain experienced. Take frequent breaks as required. Performing basic sports stretching exercises at the start and end of the day will minimise the risk of general muscle strain. Ensure axles are sufficiently lubricated, if wheels are loose tighten the collars and fixings. Replace wheels and axles as wear dictates. Consider using a pulling harness. If resistive force increases, consider two-person pull with regular breaks. Do not survey if the resistive force from crop or similar is too great. | 2             | 3 | 6 |
| Cart survey Surveying (Poor ground conditions)    | Muscular / skeletal injuries from moving equipment                       | Site Staff                            | 4                 | 3 | 12 | As Cart survey - Surveying. Further: As preference survey along line of agricultural work, remove build-up of mud at regular intervals. If ground conditions are too poor stop survey with cart and continue with Grad 601-2 if possible.   | 3             | 3 | 9 |
| Cart survey                                       | Muscular / skeletal  | Site Staff                            | 4                 | 3 | 12 | As Cart survey - Surveying. Further: If possible survey across the gradient   |               |   | 9 |

|                                      |  |            |   |   |    |   |   |   |   |
|--------------------------------------|--|------------|---|---|----|---|---|---|---|
| Surveying (Poor conditions – slopes) | injuries from moving equipment   |            |   |   |    | in conditions such as pasture. On crop it is generally best to survey in line with the cultivation but if on steep slopes consider cross-slope data collection. Perform cart change-overs in middle of traverse on to break-up the uphill leg into smaller chunks. If slope is too steep do not survey.   | 3 | 3 |   |
| Lifting heavy equipment.             | Muscular / skeletal injuries due to incorrect lifting  | Site staff | 2 | 4 | 8  | Manual Handling Training. Use correct lifting practise. Arrange site layout to establish unloading area close to the work.<br>Good lighting, firm footing and are required to minimize risk of injury. Seek assistance from other operatives using safe manual handling training (If in doubt over safe lifting and mechanical aids not possible abort operation and report to Contracts Manager).<br><i>Manual handling regulations 1992.</i><br><i>Personal Protective Equipment at Work Regulations 1992</i> | 1 | 4 | 4 |
| Working on site                      | Aggressive members of public / land owners/ farm workers.  | Site staff | 3 | 4 | 12 | Ensure access is agreed with land owners in advance. Leave site if requested by land owner Be polite at all times. Avoidance of eye contact with potentially angry/annoyed members of public.<br>Use non-threatening means of communication.<br>Do not reply to (negative) comments.  | 2 | 3 | 6 |
| Working on site                      | Injury from climbing fences/gates  | Site staff | 2 | 4 | 8  | Use designated stiles. Climb with caution and ensure the structures are weight bearing.   | 1 | 4 | 4 |
| Working on site                      | Livestock / animals / pets   | Site staff | 5 | 1 | 5  | Livestock should be moved or secured away from site team. If they are unable to be moved do not approach or antagonise animals. If livestock behave in a threatening manor leave site and inform client.  | 5 | 1 | 5 |
| Working on site                      | Leptospirosis  | Site staff | 1 | 5 | 5  | Ensure all broken skin is covered with waterproof dressings each day. Change dressings as and when they are no longer sufficient for use. Waterproof dressings are provided in all company vehicles. Provide anti-bacterial hand wash in all company vehicles.  | 1 | 5 | 5 |
| Working on site                      | Contaminated Land. Inhalation or ingestion of harmful substances. Poisoning, allergies, skin complaints from fertilizers, insecticides and other sprayed substances. | Site staff | 2 | 5 | 10 | Liaise with farmer/landowner. Do not work in or adjacent to fields where fertilizers or insecticides are in use or have recently been used.   | 1 | 5 | 5 |
| Working on site                      | Ticks  | Site staff | 1 | 4 | 4  | All staff must wear long trousers.  | 1 | 4 | 4 |
| Working on site                      | Slips, trips & falls.  | Site staff | 4 | 1 | 4  | Wear correct PPE. Do not leave trailing cables in walk routes.  | 3 | 1 | 3 |
| Working on site                      | Foot injury from sharps in ground  | Site staff | 2 | 4 | 8  | Wear correct PPE of non-magnetic boots.   | 2 | 3 | 6 |
| Working on site                      | Vehicle exhaust inhalation   | Site staff | 2 | 5 | 10 | Do not load/unload vehicle with engine on.  | 1 | 5 | 5 |
| Working on site                      | Injury from moving plant / site traffic  | Site staff | 2 | 5 | 10 | Wear hi-visibility jackets. Obey client traffic rules on site.  | 1 | 5 | 5 |
| Working on site                      | Mis-identification of substances   | Site staff | 2 | 5 | 10 | Do not store substances in unmarked containers. Where possible store in container supplied by manufacturer, if not possible then clearly label new container with contents and instructions for use.<br>Ensure all company vehicles carry COSHH data sheets with any hazardous substance.   | 1 | 5 | 5 |

|                                      |  |   |   |   |    |   |   |   |   |
|--------------------------------------|--|---|---|---|----|---|---|---|---|
| Charging equipment                   | Overloading sockets with battery chargers  | All staff, other B&B guests                             | 1 | 5 | 5  | Use sockets provided. Do not use additional multi-gang extensions.  | 1 | 5 | 5 |
| Working on site                      | Fire from battery/ acid leak   | Site staff, other workers, public.                      | 1 | 4 | 4  | Ensure cables are connected properly and have no visible defects. Do not let cable free terminals touch.<br>Ensure battery is stored upright and is not liable to other falling objects.<br>Keep away from sources of ignition and flammable substances.  | 1 | 4 | 4 |
| Using spray paint                    | Inhalation of paint fumes  | Site staff, other workers, public.                      | 2 | 5 | 10 | Use chalk or crayon as alternative. If not possible, hold spray paint facing downwind and away from people. Do not use inside or in areas without adequate ventilation.<br>Carry COSHH data sheet in vehicle.   | 1 | 5 | 5 |
| Working on sites open to others      | Grazes & contusions / muscular & skeletal injuries from slips, trips & falls on site equipment/plant and/or open inspection chambers | Survey Team Members / Site Personnel / Clients / Public | 2 | 2 | 4  | Establish main work areas and notify site personnel of activities being undertaken and dangers.<br>Correct and careful parking. Use of hazard warning lights where applicable.<br>Use signage and barriers to close off around open chambers and never leave open chambers unattended   | 1 | 2 | 2 |
| Working on "Live" construction sites | Crushing / impact / muscular / skeletal injuries from collisions with vehicles, site plant or machinery                              | Survey Team Members / Site Personnel                    | 3 | 4 | 12 | Correct use of Traffic Management where applicable.<br>Wearing appropriate High Visibility and Personal Protective Equipment clothing.<br><i>Requirements of Workplace Regulations 1992.</i><br><i>New Roads &amp; Street Works Act 1991 / Traffic Management Act 2004</i>  | 2 | 3 | 6 |
| Working on Noisy Construction Site   | Damage to hearing due to expose to loud/constant noise   | Survey Team Members                                     | 3 | 3 | 9  | Correct ear PPE to be worn at all times as appropriate for the sound and frequency levels.<br><i>Sound solutions, techniques to reduce noise at work HSG138.reducing noise at work. Guidance on the noise at work regulations 1989.</i>   | 1 | 3 | 3 |
| Working in a Power Station           | Potential for explosion/death/burns etc  | Survey Team Members/Site Personnel                      | 3 | 4 | 12 | Gas monitors are to be worn at all times during works on live gas sites, especially when using potentially sensitive equipment such as digital cameras/laser measures.<br>If alarm sounds at any point work should cease immediately. Operatives are to navigate to the nearest emergency exit and then follow established site procedure "Hazardous Area" mapping for the site should be made available to all operatives. | 2 | 3 | 6 |
| Working Outdoors Sunny weather       | Exposure to Ultraviolet Radiation  | Survey Team Members                                     | 3 | 2 | 6  | Staff Awareness Training as part of induction (toolbox talks)<br>Suitable clothing, hats & tinted safety specs supplied.<br>Lip Balm & Sunscreen minimum factor 15SPF funded.<br>Water supplied.  | 1 | 2 | 2 |
| Working Outdoors (Winter)            | Slips, trips and falls due to snow/ice, high Winds, restricted visibility, failing light / darkness                                  | Survey Team Members                                     | 3 | 3 | 9  | Training and due care. Correct footwear. Suitable clothing. Kinetic lifting techniques. Supplementary lighting.   | 2 | 3 | 6 |
| Working near deep water              | Hypothermia, drowning from slips, trips and falls  | Survey Team Members                                     | 3 | 2 | 6  | Always work as minimum of 2 man team when within 3m of water.<br>Floatation aids. Use of guards, barriers, signs.   | 1 | 2 | 2 |

### Dynamic Risk Assessment

| What are the hazards? | Who might be harmed? | What are you already doing to mitigate? | What further action is needed? | Who should take action? | When should it be completed? | Completed? |
|-----------------------|----------------------|---|--------------------------------|-------------------------|------------------------------|------------|
|                       |                      |   |                                |                         |                              |            |
|                       |                      |   |                                |                         |                              |            |
|                       |                      |   |                                |                         |                              |            |
|                       |                      |   |                                |                         |                              |            |
|                       |                      |   |                                |                         |                              |            |
|                       |                      |   |                                |                         |                              |            |
|                       |                      |   |                                |                         |                              |            |
| Completed by:         |                      | Signature:                              |                                | Date:                   |                              |            |



## HAZARD ANALYSIS AND RISK ASSESSMENT FORM MATRIX

**Probability of Occurrence:** (Vertical Axis)

- 1 = Very unlikely
- 2 = Unlikely
- 3 = Possible
- 4 = Foreseeable

**Severity of Hazard:** (Horizontal Axis)

- 1 = Minimal - Superficial injuries or illness/localised effects
- 2 = Minor - More serious effects/fairly limited extent
- 3 = Significant - Major injuries or ill health/possibility of several casualties
- 4 = Severe/Fatal - Widespread with far reaching effects

|                  |                  |                   |                   |
|------------------|------------------|-------------------|-------------------|
| 4 x 1 = Medium   | 4 x 2 = High     | 4 x 3 = Very High | 4 x 4 = CRITICAL  |
| 3 x 1 = Low      | 3 x 2 = Medium   | 3 x 3 = High      | 3 x 4 = Very High |
| 2 x 1 = Very Low | 2 x 2 = Low      | 2 x 3 = Medium    | 2 x 4 = High      |
| 1 x 1 = Trivial  | 1 x 2 = Very Low | 1 x 3 = Low       | 1 x 4 = Medium    |

### Risk Rating

$$\text{Probability (P)} \quad \times \quad \text{Severity (S)} \quad = \quad \text{Risk (R)}$$

On completion of the Assessment further action may need to be taken if the Residual Risk is still unacceptable: (i.e. if Residual Risk is 8 or above – (High))

# Appendix B – COSHH Documents

## COSHH ASSESSMENT

Ref: SUMO/COSHH/A001/Ver 3

Date: 30/04/2016



*adil*  
I. Worfold

Process & materials

Marking out with aerosol spray paint

Trade names

Linemarker

Risk to Health

HAZARD  
**HIGHLY FLAMMABLE**  
**IRRITANT**

RISK  
LOW  
LOW

Hazardous contents

1,2,4-Trimethylbenzene, 1-Methoxy 2- Propanol, 2-Methoxy-1-Methylethyl Acetate, Acetone, Butane, Butyl Acetate, Dimethyl Ether, Isobutane, ethyl Methacrylate, Propane, Solvent Naphtha (Petroleum), Light Aromatic

Route of exposure

Skin  Eyes  Inhaling  Swallowing  Cuts etc.

Maximum Exposure Limit/Occupational Exposure Standard

See material safety data sheet

Uses

Marker paint used externally

Handling Precautions

Work methods

Sprayed from aerosol canister onto surface to be marked

Controls

Keep canister upright, only spray away from persons, and if there a wind stand upwind.  
Use of spray should be prohibited if a source of ignition is close by, and under no circumstances should smoking be allowed when using the spray.  
Care should be taken not to pierce the canister and empty cans disposed of carefully.

Protective Equipment

| Equipment | EN Type     |
|-----------|-------------|
| Goggles   | EN 166 B349 |
| Gloves    | EN 388      |

Where risk of eye contact

Risk Estimate

Risk to health adequately controlled if the above handling precautions are in force

Risk to health requires above precautions and further action as detailed after

COSHH action required

Safety actions

Handling precautions in place

Maintenance of controls

Monitoring of exposure

# COSHH ASSESSMENT



Ref: SUMO/COSHH/4001/Ver 5

Date: 30/04/2016

## Process & materials

Marking out with aerosol spray paint

Information to staff



COSHH Assessment

Written instructions used



Training



On induction

Health surveillance



Field Managers to carry out site audits

Other controls



## Further Information

First Aid arrangements

|            |   |
|------------|---|
| Eyes       | Remove contact lens (if applicable). Wash with copious amounts of water for at least 15 minutes<br>Seek medical attention if discomfort continues |
| Skin       | Wash with soap or mild detergent and water<br>Seek medical attention if discomfort continues  |
| Inhalation | Move to fresh air at once<br>Seek immediate medical assistance  |
| Ingestion  | <b>DO NOT INDUCE VOMITING</b><br>Rinse mouth thoroughly with water<br>Seek medical attention if discomfort continues                              |

Fire Precautions

Keep away from sources of ignition  
May explode in a fire  
Extinguish with Powder, Water Spray, Fog or Mist

Storage

Store away from heat source, protect from direct sunlight in a well ventilated location

Transport

Transport upright in position within storage boxes in vehicle

Spillage

Extinguish all ignition sources/Ventilate area/let evaporate before

Waste Disposal

Return empty / used canisters for disposal

Further information contact

Blue Diamond, Clayfields Industrial Estate,  
Tickhill Road, Balby, Doncaster, DN4 8QG  
Tel: 01302 310 113  
Fax: 01302 310 114

**FOR FULL DETAILS OF THIS PRODUCT REFER TO THE MANUFACTURE'S MATERIAL SAFETY DATA SHEET**



# Blue Diamond

Clayfields Industrial Estate,  
Tickhill Road, Doncaster,  
South Yorkshire, DN4 8QG.  
Tel: Doncaster (01302) 310113



## TEMPORARY LINE MARKER SPRAY PRODUCT SAFETY DATA SHEET

### 1. IDENTIFICATION OF PRODUCT AND USES

**PRODUCT NAME:** Temporary Line Marker Spray  
**PRODUCT TYPE:** A hand-held pre-pressurised aerosol.  
**SPECIFIED USE:** Short term washable line or spot marking

### 2. COMPOSITION INFORMATION

| HAZARDOUS INGREDIENTS  | CAS NO   | INDEX     | CLASS/ RISK | RANGE  |
|--|----------|-----------|-------------|--------|
| Methoxy-2-Propanol   | 107-98-2 | 203-539-1 | R10         | 20-40% |
| Ethanol  | 64-17-5  | 200-578-6 | R11         | 10-30% |
| Butane   | 106-97-8 | 203-448-7 | F+, R12     | 10-30% |
| Propane  | 74-98-6  | 200-827-9 | F+, R12     | 10-30% |
| Other non-hazardous components (includes water, colour and base) |          |           |             | 5-15%  |

### 3. HAZARD IDENTIFICATION / SAFETY PRECAUTIONS

#### **THIS IS AN AEROSOL PRODUCT - USE ONLY IN WELL-VENTILATED AREAS.**

The contents are **FLAMMABLE** and maybe **HARMFUL**, by deliberate prolonged inhalation or ingestion. Hydrocarbon propellant is an asphyxiant if there is insufficient ventilation. This would constitute abuse of the product. **ALWAYS WASH HANDS AFTER USE.** Repeated exposure may cause skin dryness or cracking. **KEEP IN A SAFE PLACE AWAY FROM CHILDREN.**

**FLAMMABLE** - pressurised container. Protect from sunlight and do not expose to temperatures exceeding 50 degrees C.

Do not spray onto a naked flame or any incandescent material, hot surface or unprotected electrical equipment.

**DO NOT BREATHE THE SPRAY MIST.** Vapours may cause drowsiness and dizziness.

**DO NOT SPRAY NEAR EYES.** Irritating to eyes.

**ALWAYS READ CONTAINER WARNINGS.**

### 4. FIRST AID MEASURES

**INHALATION:** Asphyxiation by butane will precede any toxicological effects of the active elements. Remove the patient to fresh air and treat symptomatically.

**SKIN CONTACT:** Wash with soap and water. Mild irritation may occur. Repeated contact may cause skin dryness and cracking.

**EYE CONTACT:** **NEVER USE AEROSOLS NEAR EYES/MUCOUS MEMBRANES.** Flush with copious quantities of water. Seek medical advice. Product is classified as irritating to eyes.

**INGESTION:**

Unlikely. May cause nausea and discomfort. Carry out a gastric lavage to reduce discomfort. The contents would tend to be absorbed by the body with no significant effects, particularly in these concentrations. Treat symptomatically. Seek medical advice and show the container.

### 5. FIRE FIGHTING MEASURES

Pressurised aerosols should not be exposed to temperatures exceeding 50° C. Above this, containers may explode and the resultant flammable mixture will burn to produce CO<sub>2</sub>.

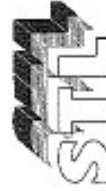
Use water to cool undamaged stock only. Avoid contamination of the water courses where damaged stock is leaking.

**EXTINGUISHING MEDIA:** CO<sub>2</sub>, BCF, dry powder, sand or earth.  
For larger fire use foam, water fog or spray, avoiding contamination.

HEALTH AND SAFETY DATA SHEET- C3-TEMP-LINEMARK-1203

Page 1 of 4





# Blue Diamond

Clayfields Industrial Estate,  
Tickhill Road, Doncaster,  
South Yorkshire, DN4 8QG.  
Tel: Doncaster (01302) 310113



POSITIVE PRESSURE BREATHING APPARATUS SHOULD BE USED.

## 6. ACCIDENTAL RELEASE MEASURES.

**INITIAL SPILLAGE WOULD BE FLAMMABLE.** Spillage is unlikely in large quantities with an aerosol product. Keep damaged containers away from sources of ignition and in well ventilated areas

**Environment.** In the concentrations within 1-1000 cans the components would not present an environmental hazard as most of the product would quickly evaporate, leaving only the residue.

**Cleaning.** In small quantities any liquid should be absorbed into a suitable media, such as sand and disposed of safely. The residue should be washed away with soapy water.

## 7. HANDLING AND STORAGE.

**Handling.** Handle carefully. In general handling aerosols should not be considered as hazardous.

**Storage.** Always store aerosols away from sources of heat, including direct sunlight and in dry conditions. Avoid extremes of temperature and moisture. A stable, cool, dry ambient environment is most suitable. Avoid contamination with other products.

The containers will not last indefinitely even when stored in a cool dry area, they should be inspected periodically during long-term storage. Note container warnings.

## 8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

Supplier recommends 600ppm total hydrocarbon based on composition. As with all aerosols, the products should only be used in well-ventilated areas, but responsible use is not potentially harmful.

**Respiratory protection.** If ventilation is not possible, then suitable respiratory protection is essential if there is a risk of solvent vapour concentrations. Use organic/inorganic vapour filters. Vapours may cause drowsiness or dizziness.

**Hand Protection.** Repeated exposure may cause skin cracking or dryness, gloves may be required.

**Eye Protection. AVOID SPRAYING NEAR EYES.** Irritating to eyes. If there is a risk of eye contact wear glasses, goggles or face-shield.

**Skin Protection.** Repeated exposure may cause skin cracking or dryness, covering of exposed skin may be required.

In general the aerosol product is a convenient and safe method of supply. Only in continuous or repeated usage conditions should personal protective measures be required or exposure controls considered.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

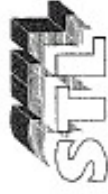
As the product is an aerosol, it is an aerosol container with no potential properties, provided the container warnings are observed. Details apply to the liquid phase of the product only (propellant gas will evaporate immediately):

|                              |                          |
|------------------------------|--------------------------|
| <b>Appearance:</b>           | Colourless liquid        |
| <b>Odour:</b>                | ammonia                  |
| <b>pH:</b>                   | Not applicable.          |
| <b>Boiling Point:</b>        | > 100°C                  |
| <b>Melting Point:</b>        | <-10°C                   |
| <b>Flash Point:</b>          | >30°C                    |
| <b>Flammability:</b>         | Highly flammable liquid. |
| <b>Autoflammability:</b>     | Not known                |
| <b>Explosive properties:</b> | None                     |
| <b>Oxidising Properties:</b> | None                     |
| <b>Vapour Pressure:</b>      | unknown                  |
| <b>Relative density:</b>     | 0.845kg/m3               |
| <b>Solubility:</b>           | soluble in water         |

HEALTH AND SAFETY DATA SHEET- C3-TEMP-LINEMARK-1203

Page 2 of 4





# Blue Diamond

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## **10. STABILITY AND REACTIVITY**

The container is inherently stable under instructed conditions for a reasonable period of time (at least 24-36 months). **AVOID** extremes of temperature, including direct sunlight and extreme freezing. Avoid exposure to moisture, which may cause container deterioration and pH, where acidity may damage container integrity. Avoid sudden impacts, which may damage container integrity.

Avoid contact with water, acids, high temperatures.

Container corrosion may occur with time and damaged containers should be disposed of before any danger is evident. Flammable, liquid contents should be considered generally not reactive.

## **11. TOXICOLOGICAL INFORMATION**

**THIS IS DESIGNED FOR EXTERNAL USE ONLY.**

Essentially, when used in this aerosol form, there are no potential toxic effects. The data is as follows:

Used correctly in aerosol form, all components can be considered to have a low order of toxicity (LD50 oral rat 500mg/kg, skin 3000mg/kg). Deliberate inhalation may cause severe pulmonary and breathing difficulty, dizziness, drowsiness (narcosis) and headaches (but this is unlikely in normal usage), and would constitute abuse.

Skin and eye irritation may result from continued exposure to vapours when used in areas of poor ventilation, or when working in close proximity to the spray for prolonged periods, and suitable steps should be taken to avoid such conditions.

**BUTANE/ PROPANE** The Occupational Exposure Standard is 600ppm (1430 mgm)

**ETHANOL** Oral rat LD50 7060mg/kg

**1-METHOXY-2-PROPANOL**

May cause irritation, redness and pain to eyes & skin. Vapours are irritating to respiratory tract, disagreeable to breathe above 100ppm because of odour. Eye, nasal & throat irritation will occur before CNS effects, which occur at 1000ppm. Headache, dizziness & incoordination may occur. If ingested, may cause irritation to gastrointestinal tract, symptoms include nausea, vomiting & diarrhoea.

## **12. ECOLOGICAL INFORMATION**

This relates to the contents only, see Disposal.

The product will evaporate quickly to the air. A colourless liquid, easily absorbed, will evaporate leaving minimal residue.

The residue will present no other significant hazards, with no dangerous products arising from degradation.

Mobility will be fast.

Degradation will be relatively slow though ultimately almost complete.

Accumulation is unlikely once physical breakdown commences.

Short and long term effects should not be considered significant. Very short term damage to aquatic and soil organisms may occur in large spillage (1000+ containers) though this should disperse quickly (especially if absorbent material is used). No effects on plants or animals are indicated. There is no ozone depletion, ozone creation or global warming potential.

Water treatment plants would not be affected by small to medium volumes of this material.

## **13. DISPOSAL CONSIDERATIONS**

The container should be totally discharged and disposed of as hazardous waste. **SEE CONTAINER WARNINGS.** I.e. do not puncture or incinerate/burn, even after use. Dried material is non-hazardous.

## **14. TRANSPORT INFORMATION**

**UN NUMBER:** UN 1950 IMDG page 9022/2120

**HAZARD CLASS:** 9 Miscellaneous Dangerous Goods. 2.1 For Sea Transport.

**UK TRANSPORT DESCRIPTION:** FLAMMABLE AEROSOLS (capacity less than 1 litre).

**UK TRANSPORT CLASSIFICATION:** MISCELLANEOUS GOODS



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(Note: ADR-for road transport in UK aerosols are classified as non-hazardous-treat as Class 9. For sea or air transport these goods should be classified as Class 2.2 (non-flammable aerosols). This is because more than 50% by weight of the contents are non-flammable).

## **15. REGULATORY INFORMATION**

The COSHH Regulations apply in the UK.

The CHIP Regulations apply in the UK.

The Environmental Protection Act Regulations apply in the UK.

### **SYMBOLS:**

F+, Protect from sunlight and do not expose to temperatures exceeding 50 degrees C. Do not pierce or burn, even after use. Do not spray onto a naked flame or any incandescent material. (aerosol safety phrases).

### **RISK/SAFETY PHRASES:**

F Highly flammable  
Xi Irritant  
C Corrosive  
N Dangerous for the environment  
R10 Flammable  
R11 Highly flammable  
R12 Extremely flammable  
S (2) Keep out of reach of children.  
S7 Keep container tightly closed.  
S16 Keep away from sources of ignition – no smoking.  
S24 Avoid contact with skin.

## **16. OTHER INFORMATION**

This is an aerosol product and should be used carefully.

It represents no greater dangers than any other aerosol product and all regulations applicable are general industry guidelines.

The information included is all that available for the component products at this time. The information contained herein is based upon the current state of our knowledge.

**SINCE THE STORAGE, APPLICATION AND DISPOSAL OF THESE PRODUCTS IS NOT WITHIN THE CONTROL OF THE COMPANY, IT IS THE USER'S OBLIGATION TO DETERMINE THE CONDITIONS OF SAFETY IN TERMS OF ALL ASPECTS RELATING TO THEIR PRODUCTS. THE COMPANY ACCEPTS NO LIABILITY FOR AND MAKES NO CLAIMS REGARDING THE USES, QUALITIES OR COMPONENTS OF THIS PRODUCT WHICH MAY VARY FROM COUNTRY TO COUNTRY.**

**ALWAYS OBSERVE ALL CONTAINER AND DATA SHEET WARNINGS  
ALWAYS READ THE LABEL BEFORE USE.**

February 20, 2004

# COSHH ASSESSMENT

Ref: SUMO/COSHH/A002/Ver 4

Date: 30/04/2016



*Call*

I. Worsfold

Process & materials

Biological Hazard - Sharps

Trade names

Risk to Health

HAZARD  
HARMFUL

RISK  
LOW

Hazardous contents

Organic and non organic sharps

Route of exposure

Skin  Eyes  Inhaling  Swallowing  Cuts etc.

Maximum Exposure Limity/Occupational Exposure Standard

n/a

Uses

n/a

Handling Precautions

Works methods

Where sharps are likely, wear appropriate personal protective equipment  
Do not touch / pick up sharps

Controls

Before starting work cover all cuts and grazes with waterproof dressings  
Wash with soap or mild detergent and water before eating, drinking  
Do not rub or touch eyes or mouth before washing hands  
Remove any clothing that may have been contaminated

Protective Equipment

| Equipment | EN Type |
|-----------|---------|
| Gloves    | EN 388  |

Risk Estimate

Risk to health adequately controlled if the above handling precautions are in force

Risk to health requires above precautions and further action as detailed after

COSHH action required

Safety actions

Handling precautions in place

Wear gloves at all times

Maintenance of controls

Site audits checking for compliance

Monitoring of exposure



# COSHH ASSESSMENT



Ref: SUMO/COSHH/A002/Ver 4

Date: 30/04/2016

## Process & materials

Biological Hazard - Sharps

Information to staff

COSHH Assessment

Written instructions used

Training

On induction

Health surveillance

Field Managers to carry out site audits

Other controls

## Further Information

First Aid arrangements

|            |   |
|------------|---|
| Eyes       | Remove contact lens (if applicable). Wash with copious amounts of water for at least 15 minutes<br>Seek medical attention if discomfort continues   |
| Skin       | Cover all cuts and grazes with waterproof dressings<br>Wash with soap or mild detergent and water<br>Seek medical attention if discomfort continues |
| Inhalation | n/a   |
| Ingestion  | n/a   |

Fire Precautions

n/a

Storage

Any sharps picked up to be kept in a secure lidded container for disposal off site

Transport

To be kept in a secure lidded container

Spillage

n/a

Waste Disposal

To be taken off site for disposal

Further information contact

|  |
|--|
|  |
|--|





# COSHH ASSESSMENT



Ref: SUMO/COSHH/A003/Ver 4

Date: 30/04/2016

Process & materials

Anywhere rodents are present - Rat Urine

Information to staff

COSHH Assessment

Written instructions used

Training

Toolbox talks

Health surveillance

Field Managers to carry out site audits

Other controls

Further Information

First Aid arrangements

|            |   |
|------------|---|
| Eyes       | Remove contact lens (if applicable). Wash with copious amounts of water for at least 15 minutes   |
| Skin       | Cover all cuts and grazes with waterproof dressings<br>Wash with soap or mild detergent and water |
| Inhalation | n/a   |
| Ingestion  | Wash with soap or mild detergent and water before eating, drinking                                |

Fire Precautions

n/a

Storage

n/a

Transport

n/a

Spillage

n/a

Waste Disposal

n/a

Further information contact

|  |
|--|
|  |
|--|

# COSHH ASSESSMENT

Ref: SUMO/COSHH/A004/Ver 4

Date: 30/04/2016



*Call*

I. Worsfold

Process & materials

Diluting and applying tracing dye to drain

Trade names

Monument Fluorescein Drain Tracing Dye

Risk to Health

HAZARD  
TOXIC  
HARMFUL  
IRRITANT

RISK  
LOW  
LOW  
LOW

Hazardous contents

Non Toxic, bio-degradable

Route of exposure

Skin  Eyes  Inhaling  Swallowing  Cuts etc.

Maximum Exposure Limit/Occupational Exposure Standard

n/a

Uses

To trace run of drain

Handling Precautions

Works methods

Tracing dye powder dissolved in a suitable container and then poured into drain

Controls

Keep container tightly closed. Store in cool, well ventilated area

Protective Equipment

| Equipment | EN Type     |
|-----------|-------------|
| Goggles   | EN 166 B349 |
| Gloves    | EN 388      |

Risk Estimate

Risk to health adequately controlled if the above handling precautions are in force

Risk to health requires above precautions and further action as detailed after

COSHH action required

Safety actions

Handling precautions in place

Maintenance of controls

Monitoring of exposure

# COSHH ASSESSMENT



Ref: SUMO/COSHH/A004/Ver 4

Date: 30/04/2016

## Process & materials

Diluting and applying tracing dye to drain

Information to staff



Briefing

Written instructions used



Risk Assessment

Training



Health surveillance



Other controls



## Further Information

First Aid arrangements

Eyes

Remove contact lens (if applicable). Wash with copious amounts of water for at least 15 minutes. Seek medical attention if discomfort continues.

Skin

Wash with soap or mild detergent and water.

Inhalation

Move to fresh air at once.

Ingestion

Rinse mouth thoroughly with water. Seek medical attention.

Fire Precautions

Extinguish with Water Spray, foam dry powder, carbon dioxide.

Storage

Keep container tightly closed. Store in cool, well ventilated area.

Transport

In secure containers.

Spillage

Wash area with cold water, use absorbent material such as sand.

Waste Disposal

Dilute only in prescribed dilution ratio.

Further information contact

Monument Tools Ltd.

Restmor Way, Hackbridge, Wallington, Surrey, SM16 7AH

Tel: 020 8288 1100

Fax: 020 8288 1108

**FOR FULL DETAILS OF THIS PRODUCT REFER TO THE MANUFACTURE'S MATERIAL SAFETY DATA SHEET**