



STYLESEAL
covering new ground



Resin Bound Aggregate Method Statement

The aim of this guide is to provide the operative with step by step instructions for the installation of a Resin Bound system, and how to achieve the best results on each and every job.

Before attempting to lay the system, please read this guide in full. Ensure that both the Risk Assessments Product Information and Safety Data Sheets have been read and understood.

Prior to using this system on a live job, we also recommend that an area is tested with a full pack of material under similar circumstances to those expected on the working site. This exercise will enable the operative to get a feel for working with resin bound aggregate and the necessary planning of an efficient workflow, to produce an ideal surface.

1. Materials

Read both the Product Information and Safety Data Sheets prior to carrying out a resin bound installation.

Make sure enough materials are purchased to allow for the entire surface to be treated and that all necessary tools are to hand.



Standard Components



GeoPave UVR Components



Aggregate



Tools for the job

2. Surface

Ensure that the substrate is sound, clean, contamination free and able to withstand the loads expected from normal use.

Remove oil, de-icing salt, grease and similar contamination by washing with a suitable degreasing agent, followed by flushing with water. Dry after washing.

On very absorbent or dusty concrete use Primer C to prime the surface, as dust will affect the adhesion of the system.

Mask ironwork or kerb edges with suitable tape to protect those areas where resin is not required.

Any edges that are not abutted should be restrained by an end-stop bead of the correct depth.



Brushing the surface and removing contamination



Drying with a hot air lance



Use Primer C on absorbent surfaces



Masking-off with peelable tape & end-stop beading

3. Mixing

Ensure that materials have been stored at room temperature in order to assist mixing and spreading. Begin to mix base component thoroughly using a drill and paddle on a suitably protected surface. If using UVR resin, dose resin with catalyst into base component whilst mixing.

Whilst mixing, pour the total content of activator slowly into the base component and continue mixing thoroughly. Stir thoroughly for 2-3 minutes until the mix is homogenous, ensuring material from the sides and base of the pail are thoroughly mixed.



Base component before mixing



Mixing the base component with a paddle



Add the activator slowly whilst mixing



Mix thoroughly for 2-3 minutes

4. Combining resin and aggregate

Resin bound mixing is typically carried out using a suitable, forced-circulation mixer.

Charge the mixer with 100kg of aggregate and dry blend for 30 seconds to mix any combined aggregate types or segregated material.

Start the aggregate mixer and immediately pour in the mixed resin. Blend until homogenous. Discharge the mix into a wheelbarrow lined with polyethylene sheet and tip onto the application area.



Charge the mixer with aggregate



Pour the mixed resin into the mixer



Blend for 30 seconds



Pour mix into polythene lined wheelbarrow

5. Trowel applying

Pre-level the material using a flat-bladed squeegee or alternatively rule level between battens of the correct thickness or any end-stop beading that may have been fixed.

Compress, level and consolidate the resin bound surfacing using a double-ended bullnose trowel.

Final finishing is achieved by wiping the surface of the trowel clean with a cloth or brush damped with white spirit. With a small amount of white spirit remaining on the trowel to assist lubrication, gently but firmly smoothing any irregularities.



Pre-level using a rake or a flat-bladed squeegee



Work to battens or end-stop beading where required



Compress, level and consolidate with a bullnose trowel



Wipe the trowel with white spirit

6. Finishing

Hardening of the system is progressive and is dependent upon the type used and the temperature. UVR requires the addition of Catalyst VA5, where as when using Std a faster cure speed is optional and can be achieved, through the use of the catalyst pack.

Where it is desirable to introduce design elements such as borders and inserts using differing coloured aggregates within the surfacing, wooden battens faced off with polyethylene tape or parcel tape should be temporarily fixed to the substrate.

Existing joints within concrete slabs should be maintained within the surfacing.

Tools and equipment should be cleaned immediately after use using white spirit



Left to cure



Design elements



Concrete slab joints



Equipment cleaned with solvent



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Resin Bound Surfacing

Features

- SuDS compatible —highly permeable
 - UV stable—non yellowing resin
 - Natural aggregate appearance
 - Alternative to conventional paving
 - Suitable for driveways, footpaths, pool surrounds, car parks, water features and many more applications
 - Highly slip resistant
- Resin bound porous stone surfacing for pedestrian and vehicular trafficked surfaces

Technical Data Sheet

Resin Bound Surfacing is a resin bound aggregate surface for pedestrian and vehicular trafficked surfaces. It is used to create pedestrian and drive-on surfaces which are decorative and functional, seamless and with slight flexibility.

The open matrix allows water to drain through to the base, helps to reduce water ponding and allows water to naturally feed surrounding planted areas and trees.

This open matrix construction is in line with the requirements of Sustainable Drainage Systems Regulations (SuDS) which are designed to reduce the potential of flooding on new and existing urban developments. An edging created from brick, stone, timber or steel should be installed to restrain the resin bound surfacing and create a clean tidy edge detail.

ResinBound Surfacing must be laid onto a sound stable and solid base such as concrete , asphalt or onto permeable bases for full SuDS compliance.

Areas of use

- Footpaths, playgrounds, pool and pond surrounds
- Concourses and promenade decks
- Driveways and car parking bays
- Showrooms, shops, reception areas and galleries
- Patios, terraces, conservatories, gardens, gazebos, water features and roof Gardens

Features

- Natural aggregate appearance
- Attractive, complements surrounding area
- UV stable non yellowing resin
- Recycled aggregates available
- An alternative to conventional paving
- Highly permeable
- Anti-slip surface dressing increases safety

Description

The Resin Bound Surfacing comprises a two component polyurethane hybrid resin and a range of selected attractive aggregates. The design of this resin bound aggregate system provides a surface which is attractive, secure to receive foot traffic, and highly porous.

It's porosity reduces surface ponding of rain and water run-off from surrounding areas, allowing water to drain naturally, feeding plants, natural watercourses or manmade drainage systems. Problems associated with freeze / thaw cycle degradation are also reduced. This is in line with the requirements of Sustainable Drainage Systems Regulations (SuDS). The resin is mixed with the aggregate and laid at the specified thickness. Brick, stone, timber or steel edging should be placed at the perimeter to restrain the material and provide a well defined decorative edge. A fine aggregate may be used to increase the slip resistance of the finished surface.

Traffic

Resin Bound Surfacing is designed for foot traffic and occasional vehicle traffic such as on domestic driveways, residential developments with light domestic traffic or car parking bays. It is however, not a road surface for heavy volumes of domestic or commercial traffic. Heavier vehicle traffic, including heavy impact and high point loading will damage the surface and may result in failure.

Scuffing

Due to the destructive scuffing forces created by power steering (e.g. three point turns) in car parks or on driveways where cars will repeatedly turn within a confined area, localised wear is more likely. It is therefore recommended that when the product is used in such locations, the surface is regularly inspected by the client or installer and maintained as required.

Non yellowing UV resin

Resin Bound Surfacing Resin is UV resistant, it will not yellow on exposure to UV light. This is a more attractive option than other types of resin which can yellow and dramatically alter the appearance of the finished surface.

Aggregate

The performance and appearance of the finished surface is dependent on the aggregate used. The Resin Bound Surfacing aggregate (in this case Quartz Parallel) blends have been designed to achieve strength, resilience, porosity and decoration.

It is important that aggregates are clean, kiln-dried, (typically with a moisture content no more than 0.5%), well graded and properly mixed in their correct proportions.

Certain aggregates can contain small amounts of iron minerals as part of their natural chemical makeup. On exposure to water this can result in areas of rust spot staining. As this is a natural occurrence within the aggregate at no point prior to application can any potential iron be identified. As such we cannot accept any responsibility for any loss or damage suffered as a result of staining.

Appearance

Being largely natural aggregates, the appearance will vary from bag to bag and batch to batch, a uniform appearance should not be expected and cannot be achieved. Where appearance is important, darker aggregate blends are less likely to show wheel marks and accumulated debris.

Maintenance

It is possible to repair localised damage by cutting out and replacing, ideally using the same aggregate as originally supplied. Ageing and weathering of the original may prevent an invisible repair. "Picking out" of some stones is possible but is likely to be minimal and localised. Any major loss of stone should be reported.

Slip Resistance

Application of Resin Bound Surfacing Anti-Slip Aggregate will significantly increase the slip resistance of the surface in the wet, without substantial change to appearance and its use will help comply with Health and Safety obligations.

Substrate Requirements

Only apply to a suitable substrate which is capable of supporting, restraining and bearing the weight of the traffic load. The best substrate is a well designed and constructed concrete, asphalt or tarmacadam.

Application to any other surface is likely to result in early failure.

Construction of base For pedestrian traffic

From base upwards, construction is typically 50-100mm of well compacted non-frost susceptible Type 1 sub-base to DoT Clause 803, followed by 40mm of 14mm close graded asphalt macadam surface wearing course to BS 4987 Part 2: 2001 Clause 7.3 which has been laid to a fall of not less than 1% to allow for good drainage and water run-off. The surface must be smooth and flat. Alternatively apply to sound well constructed and smooth concrete substrate. The base should be sound, clean and dry. New tarmac surfaces must be allowed to cool and gain strength for not less than 24 hours at 20oC.

Application

1. Only use clean, kiln-dried, well graded aggregates which are suitable for this use.
2. Ensure that the mixing station is fully waterproof when rain is expected, discontinue mixing when fog or mist are anticipated. Light rain on the surface of the system is unlikely to damage or affect the surface
3. Only apply to a sound base.
4. Place Bound Surfacing Decorative Aggregate into a clean, dry, forced action mixer, when using the 7.5kg resin unit, the mixer capacity must be no less than 110 litres.
5. Scrape all of the contents of the Resin Bound Surfacing hardener component into the larger Resin Bound Surfacing resin container and mix with a drill and helical paddle mixer attachment for 30-45 seconds. Keep mixing time to a minimum to avoid a build up of heat.

6. Immediately add the mixed resin to the aggregate in the mixer. Mix the aggregate and resin together until all the aggregate is evenly coated with resin. Keep mixing time to a minimum to avoid a build up of heat.
7. Discharge the mixed resin and aggregate onto the prepared surface, level and smooth. Excessive compaction will reduce permeability.
8. Finish the surface with a suitable float.
9. If required, immediately cast Resin Bound Surfacing Anti-Slip Aggregate onto the top surface of the wet resin and aggregate, at the rate of approximately 0.1kg/m². Ensure even coverage to prevent a patchy appearance.
10. Allow to cure. At 20°C protect against damage by heavy rain for 1 – 2 hrs.

Health and Safety

Resin Bound Surfacing Resin contains small amounts of isocyanates and is harmful by ingestion and skin contact. It is not considered harmful for transportation. Protective clothing such as goggles, overalls and gloves is recommended to prevent any effect from prolonged skin contact, inhalation or ingestion.

Temperature

Resin Bound Surfacing Resin is rapid setting and rapid curing. It's pot life and working time is affected by temperature including material, air and substrate temperature. At temperatures above 25°C the pot life and working time may be insufficient to allow its proper application.

Work should therefore not proceed when product, air or substrate temperature exceed 25°C. The temperature of concrete and tarmacadam will generally be higher than the air temperature. The temperature of the substrate must therefore be measured and monitored during application and work should stop when temperature is above 25°C.

Whilst it is possible to mix and apply at low temperatures the cure rate and rate of strength gain will be retarded; the surface must not be trafficked until it has gained sufficient strength.

Minimum depths 12mm when using 3mm max. size aggregate

15mm when using 6mm max. size aggregate

25mm when using 10mm max. size aggregate

Foot traffic after 4 hours at 20°C

Light vehicle traffic after 1- 2 days at 20°C

Minimum Thickness

Blend Max aggregate size (mm) Minimum application thickness(mm)

Quartz Parallel (16.39) 6 15

The information detailed in this leaflet is liable to modification from time to time in the light of experience and of normal product application, and before using, customers are advised to with Styleseal Ltd, quoting the contract reference number, that they possess the latest issue.

Routine Maintenance

The resin bound surface should be regularly swept clean, removing leaves and detritus material in order to prevent moss growth. If the surface has been contaminated with chewing gum it is best removed by freezing and chipping off as necessary.

Vegetation

Any moss or weed growth that occurs should be treated using an appropriate herbicide. Any ingrained algal growth can be removed and the colour of the original resin bound surface restored by applying a strong bleach solution. The bleach solution however should be applied in accordance with manufacturers guidelines and local environmental constraints. After application with the bleach the surface must be rinsed well with clean water.

Please note that staining may occur from tanning if surfaces are not kept clean from leaf debris, conkers etc.

Normal/Abnormal Use

The resin bound surface has been designed for normal pedestrian use, therefore protection should be provided wherever possible against abnormal usage.

Abnormal usage applies to heavy objects such as skips, these should not be dragged across the surface, the surface must be protected in this instance to avoid any impact damage, staining etc.

Light coloured aggregate blends may show tyre marks, removal by pressure washing as detailed below may be required.

General Cleaning

General cleaning of the surface can be carried out by cold pressure washing up to a maximum 150 bar rating to remove dirt and grime. The water should be applied using a fan type lance which should be kept 200mm above the installed surface. Care should be taken however to prevent damage to the surface with excessive water pressure. If the surface is contaminated with any cement or concrete marks these can be removed using dilute hydrochloric acid or a proprietary cement remover. In all cases we recommend that a small area is carried out first to confirm suitability.

Oil stains should be removed as soon as possible use a mild detergent as required to prevent possible staining.

Damage Repair

Should the surface be damaged we can supply small repair kits and we would suggest that these are carried out at the earliest convenience.



For more information contact our sales department on 01536 267172
Or email enquiries@styleseal.co.uk Visit our website www.styleseal.co.uk

COSHH

This Procedural Guidance describes how to control hazardous substances at work, so they do not cause ill health. It will help you understand what you need to do to ensure that StyleSeal Ltd complies with the Control of Substances Hazardous to Health (COSHH) Regulations 2002 (as amended) which apply to the way you work with these substances.

This note describes measures that you, as an employee, may need to do to protect yourself and others from hazardous substances at work.

Every year, thousands of workers are made ill by hazardous substances, contracting lung disease such as asthma, cancer and skin disease such as dermatitis. These diseases cost many millions of pounds each year to:

- industry, to replace the trained worker;
- society, in disability allowances and medicines; and
- individuals, who may lose their jobs.

You, as the employee, are responsible for taking effective measures as detailed in COSHH Assessments, Methods Statements and manufacturer's Instructions to control exposure and protect health. These measures can also improve production or cut waste.

Which substances are harmful?

- Dusty or fume-laden air can cause lung diseases, e.g. in welders, quarry workers or woodworkers. Metalworking fluids can grow bacteria and fungi which cause dermatitis and asthma.
- Flowers, bulbs, fruit and vegetables can cause dermatitis.
- Wet working, eg catering and cleaning, can cause dermatitis.
- Prolonged contact with wet cement in construction can lead to chemical burns and/or dermatitis.
- Benzene in crude oil can cause leukaemia.
- Many other products or substances used at work can be harmful, such as paint, ink, glue, lubricant, detergent and beauty products.

In general employees of StyleSeal Ltd will be exposed to a limited amount of hazardous substances and should be aware of the hazardous substances they may encounter from time to time, these include (but are not limited to):-

- **Resins**
- **Thinners**
- **White Spirit**
- **Brick / Concrete Dust**
- **Oils**
- **Detergents**

Ill health caused by these substances used at work is preventable. Many substances can harm health but, used properly, they almost never do.

Substances can also have other dangerous properties. They may be flammable, for example solvent-based products may give off flammable vapour. Clouds of dust from everyday materials, such as wood dust or flour, can explode if ignited.

Look at each substance

Which substances are Hazardous to Health?

In what way are they harmful?

You can find out by: checking information that came with the product, eg ;-a safety data sheet; or COSHH Assessment.

Think about the task

If the substance is harmful, how might you be exposed?

- Breathing in gases, fumes, mist or dust?
- Contact with the skin?
- Swallowing?
- Contact with the eyes?
- Skin puncture?

Bear these in mind when you look at the tasks.

Exposure by breathing in

Once breathed in, some substances can attack the nose, throat or lungs while others get into the body through the lungs and harm other parts of the body, eg the liver.

Exposure by skin contact

Some substances damage skin, while others pass through it and damage other parts of the body. Skin gets contaminated:

- by direct contact with the substance, eg if you touch it or dip your hands in it;
- by splashing;
- by substances landing on the skin, eg airborne dust;
- by contact with contaminated surfaces – this includes contact with contamination inside protective gloves.

Exposure by swallowing

People transfer chemicals from their hands to their mouths by eating, smoking etc without washing first.

Exposure to the eyes

Some vapours, gases and dusts are irritating to eyes. Caustic fluid splashes can damage eyesight permanently.

Exposure by skin puncture

Risks from skin puncture such as butchery or needlestick injuries are rare, but can involve infections or very harmful substances, eg drugs.

Assessing risk

The COSHH Regulations require employers to assess the risk to their employees, and to prevent or adequately control those risks. Sometimes, it's easy to judge the amount of exposure to substances and decide what you can do about it.

When a task involves very small amounts of material, even if these are harmful, when there is little chance of it escaping, the risk is low. But the risk in a different task – such as cleaning up and disposal – will be higher because the harmful substance may be breathed in or get onto the skin.

When the task involves larger amounts of material, with obvious leaks, exposure is higher and so is the risk. Whether the substance is harmful or not, your need to control it is obvious. Decide what measures you need to take, and when.

What are exposure control measures?

Control measures are always a mixture of equipment and ways of working to reduce exposure. The right combination is crucial. No measures, however practical, can work unless they are used properly.

Employees must follow any 'standard operating procedure' safe system of work or method statement.

Examples of control measures

Substance, process	Control equipment	Way of working	Managing
Cleaning with solvent on rag.	Use a rag holder. Provide a small bin with a lid for used rags.	Avoid skin contact. Reduce solvent vapour from used rags.	Check controls are used. Safe disposal.
Dust and sparks from abrasive wheel.	Put an enclosure around the wheel and extract the air to a safe place.	Check the airflow indicator. Make sure the extraction works.	Maintain controls. Test controls as required by law.
Fume from cutting demolition scrap.	Ventilated welding helmet, gloves. Washing facilities.	Work outdoors upwind of the fume wherever possible. Allow the fume to clear before removing helmet.	Check if there is any lead paint on the scrap being cut. Carry out health checks.
Cutting-fluid mist from a lathe. Swarf.	Put an enclosure around the lathe and extract the air to a safe place. Protective gloves.	Use skin-care products. Make sure the extraction works. Allow time for the mist to clear from the enclosure before opening it.	Train workers. Check and maintain fluid quality. Test controls as required by law. Carry out health checks.
Dust from disc cutter on stone worktop.	Use an enclosure to extract air to a safe place. High-efficiency vacuum cleaner.	Cut and polish worktops inside an enclosure. Vacuum up dust.	Test and maintain controls. Carry out health checks.

Choosing control measures

In order of priority:

1. Eliminate the use of a harmful product or substance and use a safer one.
2. Use a safer form of the product, eg paste rather than powder.
3. Change the process to emit less of the substance.
4. Enclose the process so that the product does not escape.
5. Extract emissions of the substance near the source.
6. Have as few workers in harm's way as possible.
7. Provide personal protective equipment (PPE) such as gloves, coveralls and a respirator.
PPE must fit the wearer.

Control equipment

Control equipment comes in many forms. It includes ventilation to extract dust, mist and fume; glove boxes and fume cupboards; spray booths and refuges (clean rooms in dirty work areas). It also includes using water to reduce dust, and systems for disinfecting cooling water.

Staying in control: Checking and maintaining

Once you've got control, you need to keep it. As your employer, we will ensure that the control measures (equipment and the way of working) keep working properly.

We will nominate person this person will be competent to check;-

- check that the process isn't emitting uncontrolled contaminants;
- check that the control equipment continues to work as it was designed;
- check that workers follow the right way of working.

Two of the most common control measures where maintenance is critical are local exhaust ventilation (LEV) and personal protective equipment (PPE).

Personal protective equipment (PPE)

Personal protective equipment is often used as part of control measures. This also needs checking and maintenance because, if it fails, it no longer provides protection and exposes the wearer to danger. The users need to know exactly what they are doing, and so do the supervisors.

PPE suppliers and trade associations can tell you about training in how to use it properly. See 'Getting help' and 'Further information'.

Skills and experience

Training, instruction and information

When you are likely to be exposed to particular hazards this will be covered in the Risk Assessment / method Statement for the task and if required special instruction and training will be provided.

If you need to use respirators, they also need face fitting and training will be provided.

If you need to use protective gloves, they need to know how to put them on and take them off without contaminating their skin. –See below

Chemical Hazard Symbols

Changes to European legislation have meant that the Chemical Hazard Symbols will be changing to bring them in line with international symbols.

In addition there are a number of other changes to the way safety information is to be communicated to users, over the next few years, Risk Phrases and Safety Phrase will be replaced with Hazard Statements and Precautionary Statements. All these changes will need to be reflected in Safety Data Sheets and on packing labels. It would therefore be prudent to regularly review your safety data sheets to ensure you have the current version.

New hazard pictograms

Although the CLP hazard pictograms are very similar to the CHIP hazard symbols, they have a new shape, new design and a new colour. A brief description is given here for information purposes only.

 Acute toxicity, Very toxic (fatal), Toxic etc	 Harmful to the environment
 Gasses under pressure	 oxidising gases, oxidising liquids, oxidising solids
 Harmful skin irritation, serious eye irritation	 Respiratory sensitiser, mutagen, carcinogen, reproductive toxicity, systemic target organ toxicity, aspiration hazard
 Flammable gasses, flammable liquids, flammable solids, flammable aerosols, organic peroxides, self-reactive, pyrophoric, self-heating, contact with water emits flammable gas	 Corrosive (causes severe skin burns and eye damage), serious eye damage
 Explosive, self reactive, organic peroxide	

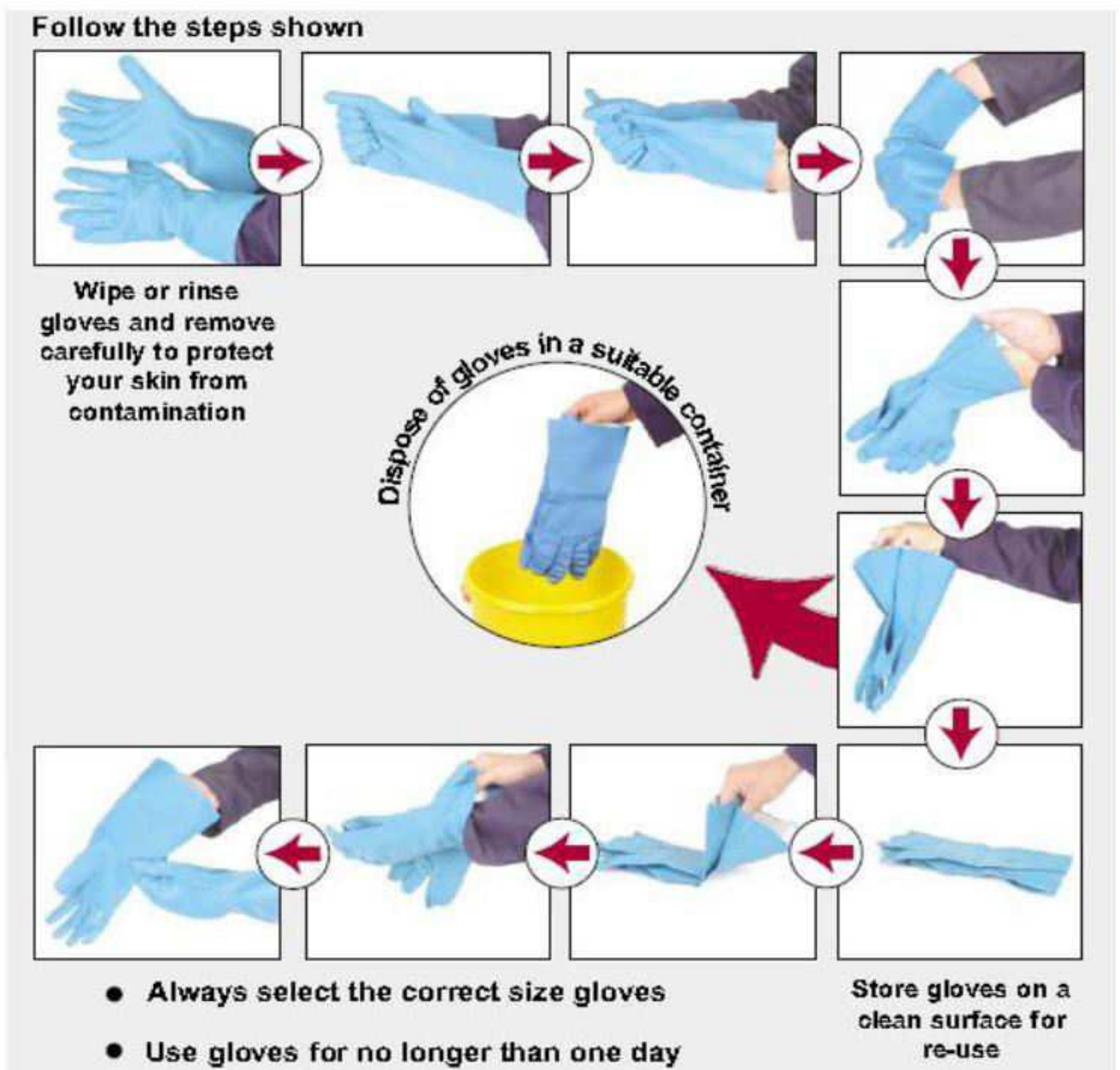
Hazard statements

New hazard statements will replace the CHIP risk phrases.

Precautionary statements

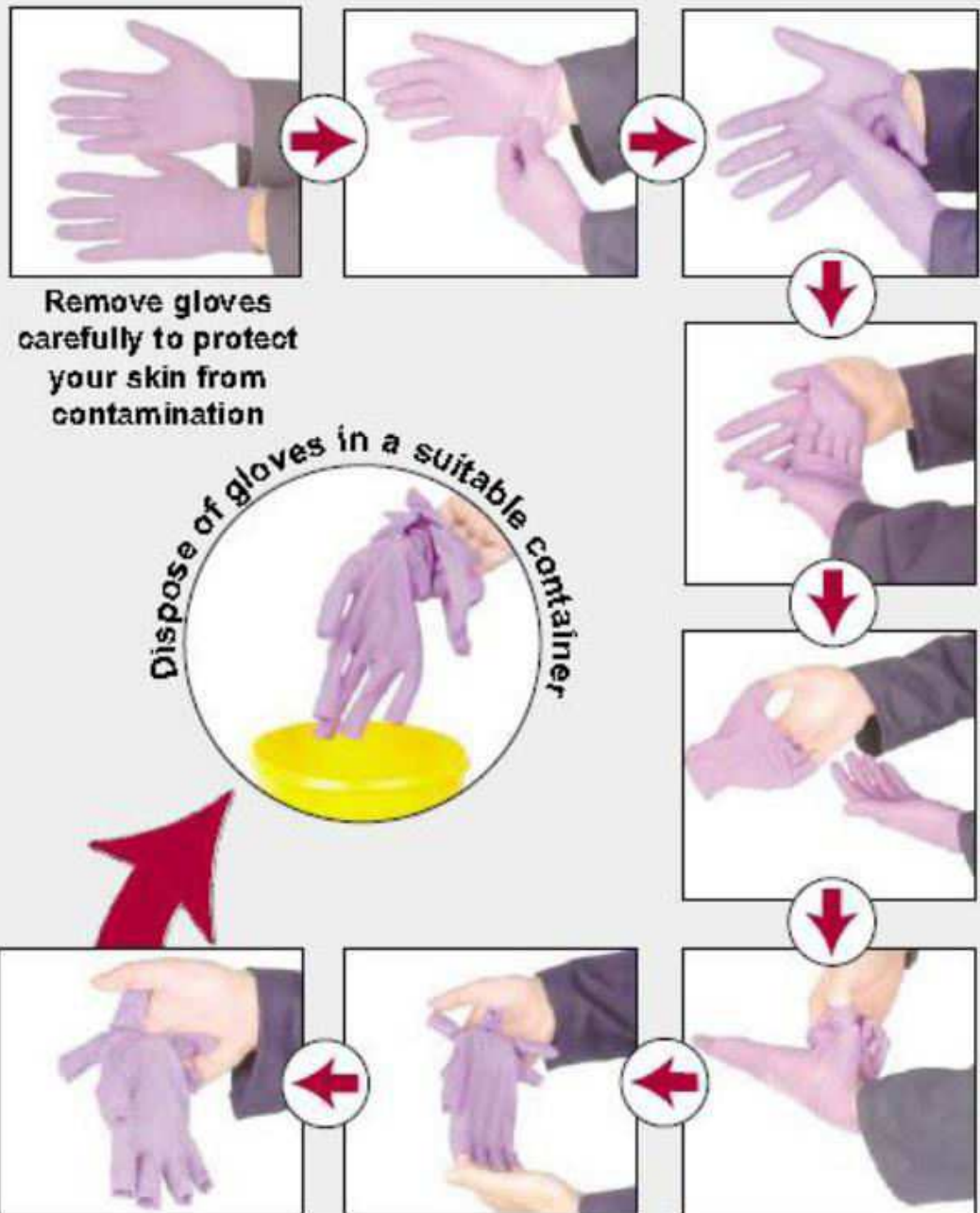
New precautionary statements will replace the CHIP safety phrases.

Procedure for correct removal, storage and putting on of re-usable gloves:



Procedure for correct removal and disposal of single use gloves:

Follow the steps shown



:

Please sign to confirm that you understand the contents of this document and agree to abide by the procedures contained within.

Signed; *Dean Precious*

Name Dean Precious

Date 17/10/2013

SAFETY DATA SHEET

**Product Name: UV RESISTANT
ACTIVATOR COMPONENT – PART B**

Page 1

Revision: 5 April 2013

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Identification of the product: UV Resistant Activator Component – Part B
Chemical family: Polyurethane (MDI)
Supplier: Styleseal
**16 Oldenburg Rd
Corby Northants**

2. HAZARDS IDENTIFICATION

Harmful by inhalation. This product is a respiratory sensitiser: repeated inhalation of vapour or aerosol at levels above the occupational exposure limit could cause respiratory sensitisation. The onset of the respiratory symptoms could be delayed for several hours after exposure. A hyper-reactive response to even minimal concentrations of MDI may develop in sensitised persons. Repeated and/or prolonged contact may cause skin sensitisation. Irritating to eyes and skin. Reacts slowly with water to produce carbon dioxide which may rupture closed containers.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Component</u>	<u>CAS No</u>	<u>Wt%</u>
Hexamethylene-1,6-diisocyanate homopolymer	28182-81-2	100

4. FIRST AID MEASURES

Inhalation: Remove from source of exposure. Obtain medical attention. Treatment is symptomatic for primary irritation or bronchospasm
Skin contact: Flush with water, use soap if available. If symptoms develop, obtain medical attention
Eye contact: Rinse carefully and thoroughly with water. Seek medical advice. Ingestion: Seek medical advice. Do not induce vomiting.

5. FIRE FIGHTING MEASURES

Fire fighting procedures: Use foam, dry chemical, or water fog to extinguish fire.

The information contained in the safety data sheet is given in good faith. It is accurate to the best of our knowledge and belief and has been compiled from data on raw materials. The information given in this data sheet does not constitute or replace the user's own assessment of workplace risk as required by other health and safety legislation.

SAFETY DATA SHEET

**Product Name: UV RESISTANT
ACTIVATOR COMPONENT – PART B**

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Hazardous combustion products: Carbon monoxide, Carbon dioxide, Nitrogen oxides,
Isocyanate vapour, Hydrogen cyanide (trace)
Protective equipment: Self-contained breathing apparatus, protective clothing.

6. ACCIDENTAL RELEASE MEASURES

Land Spill: Absorb liquid with sand or earth and sweep up, do not store material in sealed containers. Keep under damp conditions for several days prior to disposal by incineration or approved landfill. If it has entered drains, inform local authorities (Fire Service).

Water spill: Stop source if possible to do so without hazard. Advise authorities.

7. HANDLING AND STORAGE

Keep tightly closed in original clearly marked containers. Avoid exposure to temperatures above 50°C and below 0°C. Contaminated product should not be placed into sealed containers due to the risk of hazardous build-up of pressure. Ensure adequate ventilation within enclosed working areas, keeping within OEL limits. **Do not apply by spray.** When handling, observe the usual precautionary measures for chemicals.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Hand protection: Impermeable gloves
Eyes: Goggles
Skin: Overalls, boots

Keep away from foodstuffs, drink and tobacco. Wash hands thoroughly before breaks and after work. Change badly soiled work clothing. Individuals with hypersensitivity of the respiratory tract should avoid using this material.

9. PHYSICAL AND CHEMICAL PROPERTIES

These are indicative value only. Please refer to the product specification sheet.

Physical state: Liquid
Form/colour: Brown
Odour: Earthy, musty
Flashpoint: >158°C

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SAFETY DATA SHEET

**Product Name: UV RESISTANT
ACTIVATOR COMPONENT – PART B**

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Decomposition temperature: 260°C
Specific gravity: 1.16 g/cm³
Ignition Temperature: >400 °C
Vapour pressure: 1.0 hPa at 20°C
Solubility (water): Insoluble. Reacts forming carbon dioxide and polyurea

10. STABILITY AND REACTIVITY

Stability: Stable when stored and handled correctly
Conditions to avoid instability: Exothermic reaction with materials containing active hydrogen groups. Reacts with water forming CO₂; risk of bursting of closed vessels.

11. TOXICOLOGICAL INFORMATION

Acute toxicity:

LD₅₀ (oral, rat): >5000 mg/kg

Special properties/effects:

Non adherence of occupational hygiene precautions leading to over-exposure entails the risk of irritating effects on eyes, nose, throat and respiratory tract. Delayed appearance of complaints and development of hyper-sensitivity are possible. Hyper-sensitive persons may suffer difficult breathing, coughing or asthma at low concentrations.

12. ECOLOGICAL INFORMATION

Do not allow to escape into waters, wastewater or soil.

This product reacts with water forming an inert non biodegradable material Water pollution class (WGK): 1 – slightly hazardous to water

13 – DISPOSAL CONSIDERATIONS

Residues may be rendered inert by converting into polyurea by reacting with a mixture of water and 5% detergent solution.

14 – TRANSPORT INFORMATION

UN No n/a

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SAFETY DATA SHEET

**Product Name: GEOPAVE UV RESISTANT
ACTIVATOR COMPONENT – PART B**

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Revision: 5 April 2013

Hazard Class (ADR):	n/a
Packaging Group:	n/a
ICAD/IATA:	n/a
TREM CARD:	n/a
IMDG:	n/a
Marine Pollutant:	n/a
ADR:	n/a
Emergency Action Code:	n/a

Other information:

Not dangerous cargo. Irritating to skin and mucous membranes. Avoid temperatures below 0°C. Avoid heat above +50°C. Keep dry. Keep away from food-stuffs, acids and alkalis.

SAFETY DATA SHEET

Product Name: **UV RESISTANT
ACTIVATOR COMPONENT – PART B**

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15. REGULATION INFORMATION



Classification and labelling according to EEC directive:

Contains hexamethylene-1,6-diisocyanate homopolymer

Hazard symbol: Xn Harmful

Safety phrases: S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

S28 After contact with skin, wash immediately with plenty of water and seek medical advice

S38 In case of insufficient ventilation, wear suitable respiratory equipment

S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)

Risk phrases: R20 Harmful by inhalation

R36 Irritating to the eyes

R37 Irritating to the respiratory system

R38 Irritating to the skin

R42 May cause sensitisation by inhalation

R43 May cause sensitization by skin contact

Maximum Exposure Limit (MEL)

Diphenylmethane-4,4-diisocyanate 0.02 mg/m³ (8 hours av. value)

Short term exposure limit: 0.07 mg/m³ (15 min av. value-measured as NCO)

Any existing national regulations for handling isocyanates must be observed. Airborne emissions must be controlled to the requirements of local and national legislation.

Diphenylmethane diisocyanate is a substance covered by EC-Directive 82/501/EEC of June 24.1982, including subsequent amendments, concerning the risks of major accidents in certain industrial activities.

Reference should be made to Health and Safety at Work Act and the control of substances hazardous to Health Regulations.

The information contained in the safety data sheet is given in good faith. It is accurate to the best of our knowledge and belief and has been compiled from data on raw materials. The information given in this data sheet does not constitute or replace the user's own assessment of workplace risk as required by other health and safety legislation.

SAFETY DATA SHEET

**Product Name: GEOPAVE UV RESISTANT
ACTIVATOR COMPONENT – PART B**

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Revision: 5 April 2013

16. OTHER INFORMATION

In all areas where MDI aerosols and/or vapour concentrations are produced, exhaust ventilation must be provided in such a way that the OEL is not exceeded. Not readily biodegradable.

The information contained in the safety data sheet is given in good faith. It is accurate to the best of our knowledge and belief and has been compiled from data on raw materials. The information given in this data sheet does not constitute or replace the user's own assessment of workplace risk as required by other health and safety legislation.

MATERIAL SAFETY DATA SHEET FOR BOSS WHITE SPIRIT THINNER



1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

Product type:	White Spirit
Intended use:	Thinner for white spirit based paint
Trade Name:	BOSS White Spirit Thinner
Supplier of product:	The BSS Group Ltd
Registered Office:	Travis Perkins PLC, Lodge Way House, Lodge Way, Harlestone Road, Northampton NN5 7UG.
Telephone/Fax Numbers:	0116 262 3232 / 0116 253 1343
E-mail Address	reception@bssgroup.com
Web site Address	www.bss-group.co.uk

2. HAZARD IDENTIFICATION

Classification (EC 1272/2008):	Physical and Chemical Hazards Human health Environment	Flam. Liq 3 – H226 EUH0666; Asp. Tox. 1 – H 304 Aquatic Chronic 2 – H411
Classification:	Xn;R65. N;R51/53. R10, R66	

EC No:	265-185-4
Contains:	Naphtha (Petroleum), Hydrodesulfurized Heavy; Low Boiling Point HYD
Label in Accordance with (EC) No. 1272/2008	

MATERIAL SAFETY DATA SHEET FOR BOSS WHITE SPIRIT THINNER

2. HAZARD IDENTIFICATION (cont.)

Signal Word:	Danger	
Hazard Statements:	H226 H304 H411	Flammable liquid and vapour May be fatal if swallowed and enters airways Toxic to aquatic life with long lasting effects
Precautionary Statements:	P273 P280 P370 P378a P501	Avoid release to the environment Wear protective gloves/protective clothing/eye protection/face protection In case of fire: Use alcohol-resistant foam, carbon dioxide or dry powder for extinction Dispose of contents/container to registered waste disposal company
Supplementary Precaution Statements:	P210 P233 P240 P241 P242 P243 P301+310 P303+361+353 P331 P391 P403+235 P405	Keep away from heat/sparks/open flames/hot surfaces. No smoking Keep container tightly closed Ground/bond container and receiving equipment Use explosion-proof electrical/ventilating/lighting/....equipment Use only non-sparking tools Take precautionary measures against static discharge IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician IF ON SKIN (or hair): remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Do NOT induce vomiting Collect spillage Store in a well-ventilated place. Keep cool Store locked up
Supplemental Label Information:	EUH066	Repeated exposure may cause skin dryness or cracking

3. COMPOSITION/INFORMATION ON INGREDIENTS.

Main Constituents:	EC No	CAS No	Content	Classification
Naphtha (Petroleum) Hydrosulferside Heavy	265-185-4	64742-82-1	60-100%	Xn;R65. N;R51/53. R10,R66

4. FIRST AID MEASURES

General:	Keep the affected person warm and at rest. Get prompt medical attention. Do not give victim anything to drink if they are unconscious
Inhalation:	Move the exposed person to fresh air at once. Keep the affected person warm and at rest. Get prompt medical attention. If breathing stops, provide artificial respiration. Place unconscious person on the side in the recovery position and ensure breathing
Ingestion:	NEVER make an unconscious person vomit or drink fluid! DO NOT induce vomiting. Get medical attention immediately. Provide rest, warmth and fresh air.
Skin Contact:	Remove affected person from source of contamination. Promptly wash contaminated skin with soap or mild detergent and water. Promptly remove clothing if soaked through and wash as above. Do NOT use solvents or thinners.
Eye Contact:	Make sure to remove any contact lenses from the eyes before rinsing. Immediately flush with plenty of water or eyewash solution for up to 10 minutes. Get medical attention immediately. Continue to rinse.

MATERIAL SAFETY DATA SHEET FOR BOSS WHITE SPIRIT THINNER

5. FIRE FIGHTING MEASURES

Extinguishing Media:	
Recommended:	Alcohol resistant foam, CO ₂ , dry powder or water fog. Do not use water jet as an extinguisher, as this will spread the fire.
Special Fire Fighting Procedures:	Keep run-off water out of sewers and water sources. Dike for water control. Cool containers exposed to flames with water until well after the fire is out. Move container from fire area if it can be done without risk. If risk of water pollution occurs, notify appropriate authorities.
Unusual Fire & Explosion Hazards:	May explode in a fire. May travel considerable distance to source of ignition and flash back.
Specific Hazards:	By fire, toxic gases may be formed (Cox, NO _x)

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Wear protective clothing as described in Section 8 of this safety data sheet
Spill Clean Up Methods:	Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate. Keep combustibles away from spilled material. Provide ventilation and confine spill. Do not allow runoff to sewer. Wash thoroughly after dealing with spillage. Inform Authorities if large amounts are involved. Absorb with inert, damp, non-combustible material, then flush area with water.

7. HANDLING AND STORAGE:

Usage Precautions:	Keep away from heat, sparks and open flame. Avoid spilling, skin and eye contact. Ventilate well, avoid breathing vapours. Use approved respirator if air contamination is above acceptable level. Wear full protective clothing for prolonged exposure and/or high concentrations. Vapours are heavier than air and may spread near ground to source of ignition. The product is flammable, and heating may generate vapours which may form explosive vapour/air mixtures. Use engineering controls to reduce air contamination to permissible exposure level. Use explosion proof electric equipment.
Conditions for safe storage, including incompatibilities:	Store in tightly closed container in a dry, cool and well-ventilated place. Store in closed original container at temperatures between 5°C and 25°C. Store away from Acids, Oxidising material, Alkalies.
Usage Description:	Avoid inhalation of vapours and contact with skin and eyes. Rags and the like, moistened with flammable liquids, must be discarded into designated fireproof bucket.

MATERIAL SAFETY DATA SHEET FOR BOSS WHITE SPIRIT THINNER

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredient Comments:		
WEL = Workplace Exposure Limits		
Protective Equipment:		
Process Conditions:	Provide eyewash station	
Engineering Measures:	Provide adequate general and local exhaust ventilation	
Respiratory Protection:	No specific recommendations made, but respiratory protection must be used if the general level exceeds the Recommended Workplace Exposure Limit. If ventilation is insufficient, suitable respiratory protection must be provided.	
Hand Protection:	Use suitable protective gloves if risk of skin contact. Use protective gloves made of: Nitrile	
Eye Protection:	Wear approved chemical safety goggles where eye exposure is reasonable probable.	
Hygiene Measures:	Wash at the end of each work shift and before eating, smoking and using the toilet. Promptly remove any clothing that becomes wet or contaminated. When using do not eat, drink or smoke. DO NOT SMOKE IN THE WORK AREA! Use appropriate hand lotion to prevent defatting and cracking of skin.	
Skin Protection:	Wear apron or protective clothing in case of splashes	

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Coloured Liquid		
Colour:	Colourless		
Odour:	Aliphatic Hydrocarbon		
Solubility:	Slightly soluble in water		
Boiling point:	152 760mm Hg	Relative Density:	0.778 20 Deg C
Vapour density:	>1.0	Vapour pressure:	3.3 mm Hg at 20 Deg C
Viscosity:	N/A	Flash Point:	38-41DEG Sh CC (Setaflash Closed Cup)
Volatile Organic Compound (VOC):	778 g/litre		

10. STABILITY AND REACTIVITY

Stability:	Stable under normal temperature conditions and recommended use
Conditions to Avoid:	Avoid heat, flames and other sources of ignition
Materials to Avoid:	Strong oxidising substances. Acids – organic. Strong alkalis
Hazardous Decomposition Products:	By fire, toxic gases (CO, CO2, NOx) may be formed

MATERIAL SAFETY DATA SHEET FOR BOSS WHITE SPIRIT THINNER

11. TOXICOLOGICAL INFORMATION

Toxic Dose 1 – LD 50:	>5050 mg/kg (oral rat)
Toxic Conc. – LC 50:	>13.1
Inhalation:	Harmful by inhalation. Harmful: danger of serious damage to health by prolonged exposure through inhalation. Vapours may cause headache, fatigue, dizziness and nausea.
Ingestion:	Harmful if swallowed
Skin Contact:	Product has a defatting effect on skin. Prolonged contact may cause redness, irritation and skin.
Eye Contact:	Irritation of eyes and mucous membranes
Health Warnings:	Swallowing concentrated chemical may cause severe internal injury
Medical Symptoms:	Upper respiratory irritation. Nausea, vomiting. Allergic rash.
Medical Considerations:	Skin disorders and allergies

12. ECOLOGICAL INFORMATION

Ecotoxicity:	Dangerous for the environment: May cause long-term adverse effects in the aquatic environment
TOXICITY:	
LC 50, 96Hrs, Fish mg/l	10-30
EC 50, 48Hrs, Daphnia mg/l	10-22
IC 50 72Hrs, Algae mg/l	4.6-10
Degradability:	The product is biodegradable
Mobility:	The product is insoluble in water and will spread on water surface

13. DISPOSAL CONSIDERATIONS

General Information:	Waste to be treated as controlled waste. Disposal to licensed waste disposal site in accordance with local Waste Disposal Authority
Disposal Methods:	Disposal and waste residues in accordance with local authority requirements. Absorb in vermiculite or dry sand, disposal in licensed hazardous waste.

14. TRANSPORT INFORMATION

UN Number:	1300
Proper shipping name:	WHITE SPIRIT
ADR Class No:	3
ADR Class	Class 3: Flammable Liquids
IMDG Class:	3.3
Transport Labels:	 A red diamond-shaped hazard label with a black flame icon in the center. Below the flame, the words "FLAMMABLE LIQUID" are written in black capital letters. At the bottom of the diamond, the number "3" is written in black.

MATERIAL SAFETY DATA SHEET FOR BOSS WHITE SPIRIT THINNER

14. TRANSPORT INFORMATION (cont.)

Packaging Group:	
ADR Pack Group	III
IMDG Pack Group:	III

Environmental Hazards:	
Environmentally Hazardous Substance/Marine Pollutant	
	
Transport in bulk according to Annex II of MARPOL73/ 78 and the IBC Code	

15. REGULATORY INFORMATION

UK regulatory References:	Health and Safety at Work Act 1974
Statutory Instruments:	The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (S.I 2009 No. 716). Control of Substances Hazardous to Health
Approved Code of Practice:	Classification and labelling of Substances and Preparations Dangerous for Supply
Guidance Notes:	Workplace Exposure Limits EH40. Introduction to Local Exhaust Ventilation HS(g)37. CHIP for everyone HSG(10*)
EU Legislation:	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2001 concerning the Registration, Evaluation, Authorisation and restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1991/48/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulations (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 96/67/EEC, 93/105/EEC and 2000/21/EC, including amendments

16. OTHER INFORMATION

R Phrase No.	Text
R10	Flammable.
R65	Harmful: may cause lung damage if swallowed
R66	Repeated exposure may cause skin dryness or cracking
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
<u>DISCLAIMER</u>	
This information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.	



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