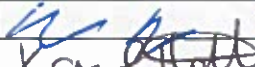




THAMESLINK ROLLING STOCK PROJECT

Hornsey Planning Condition No. 22

Storage of Oils, Fuels and Chemicals

Document Ref: TRSP-HOR-PC-001

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Distribution List

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Note

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1 Executive Summary

This report is produced to document the compliance of the new Hornsey Depot scheme with the following planning condition.

"Any facilities above ground for the storage of oils, fuels or chemicals shall be sited on an impervious base and surrounded by impervious walls. The volume of the bunded compound shall be at least equivalent to the capacity of the tank plus 10%. All filling points, vents, gauges and sight glasses must be located within the bund. The drainage system of the bund shall be sealed with no discharge to any watercourse, land or underground strata. Associated pipe work must be located above ground and protected from accidental damage. All filling points and tank overflow pipe outlets must be detailed to discharge into the bund. All works and facilities as referred to above shall be constructed and completed in accordance with plans submitted to and approved in writing by the Local Planning Authority."

The oils, fuels and chemicals to be utilised in the future train servicing operations of the new depot are summarised as follows:

- **Screenwash** – to be dispensed from the apron sidings in order to re-fill the screenwash storage tanks of trains serviced from the aprons.
- **Advanced detergent** – to be used as a washing agent in the north and south carriage wash machines.
- **Bronopol biocide** - for use as a means of bacterial control of recycled water within the north and south carriage wash machine water storage tanks.
- **Salt** – as an additive to the north and south carriage wash machine final rinsing process to remove streaking of train windows.
- **Granular Active Carbon** – to be used to filter detergent from the recycled water.
- **Train cleaning chemicals (various)** – proprietary cleaning sprays to be used on the servicing aprons by the train cleaning crews.

It can be seen, in the following document, that suitable provision has been made for the storage and oils, fuels and chemicals in order to minimise the risk of pollution to adjacent water courses. In summary:

- **Screenwash** – 1000L storage containers (Intermediate Bulk Containers) and all pumping equipment are to be located on an impervious bunded area designed to accommodate the planned 2000L storage capacity plus an additional 10%. All pipework and associated equipment is contained within this bunded area.
- **Advanced detergent** – this shall be stored within a 2500L plastic fabricated tank with integrated bund. No further containment is necessary as the plant room floor is designed to drain directly to foul sewer to which the detergent is permitted to enter. Walled impervious bunded areas were not necessary or practical as the detergent offload is carried out directly from delivery vehicles and no detergent is to be stored at these locations. Additionally, the off load pumping equipment is located within the plant rooms.
- **Bronopol biocide** – stored in 25L drums within the plant room buildings on moveable proprietary drip trays. Any accidental discharge/ spillage within the plant room shall be routed to foul sewer via the plant room floor drainage system.
- **Salt** – to be stored in 25kg bags within the wash plant rooms. This is not environmentally hazardous.
- **Granular Active Carbon** - not environmentally hazardous. To be stored in carriage wash plant rooms.
- **Train cleaning chemicals (various)** – the proprietary storage cabinet contains an integrated drip tray which shall cater for 110% of the total volume of cleaning sprays to be used.

2 Project Background

The Thameslink Programme will see the introduction of a new generation of electric commuter trains operating from Bedford, through central London to the southeast. In order to service and maintain these new trains two new depots are being constructed, one located to the south of the core Thameslink route and the other to the north at Hornsey Depot. These new servicing facilities at Hornsey include 8 new stabling siding as well as 2 new carriage wash machines.

The Thameslink Rolling Stock Project (TRSP) has been awarded to Siemens by the DfT. Siemens have appointed VolkerFitzpatrick as their design and build Contractor to deliver the Hornsey depot works. The Hornsey Depot site is currently occupied by Govia Thameslink Railway (GTR). From here they operate and maintain their rolling stock fleet in servicing the Great Northern franchise.

3 Hornsey Site Layout

The almost two-kilometre long site is centred around Hornsey Station. It is slightly elevated from the surrounding area along its length, with an embankment around the northern end of the site down to the adjacent road. The following watercourses pass below the depot ground level: the Moselle Brook, which is culverted underneath the new main facility building and the manmade New River. The latter passes beneath the site close to the new pedestrian access at Turnpike Lane and is owned and maintained by Thames Water. To the south of the site a twin Thames Water surface water and foul sewer runs perpendicular to the railway at 9m below ground level.

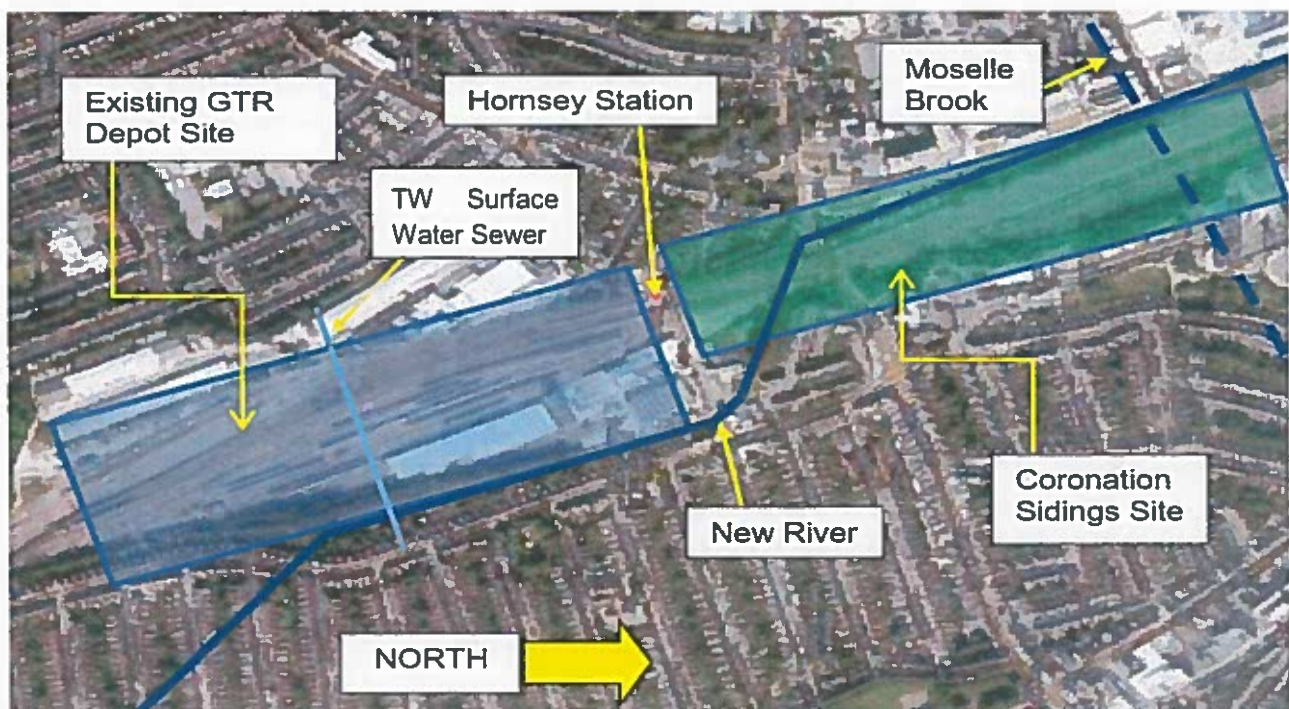


Figure 1: Hornsey Site Plan

4 Storage of Oils, Fuels and Chemicals

The oils, fuels and chemicals to be stored for the new depot facilities are described in this section.

4.1 North & South Carriage Wash Machine Plant Rooms

The two Carriage Wash Machines (one located north and one located south) are designed to automatically wash trains, using 75% recycled wash water, by a single straight through pass. Both washes are housed within totally enclosed buildings measuring 50m long by 6.0m wide. Adjacent to each wash is an equipment plant room consisting of all pumping equipment, recycled wash water tanks as well as detergent storage, delivery and dosing equipment. The drainage to the plant room floor is designed such that all effluent from the recycled water filtration processes, and all overflows from plant room water tanks, discharge to foul drains via the carriage wash machine interceptor sump tank.

The detergent to be used in the carriage wash machines shall be nominally pH neutral so as to be dischargeable to foul sewer (please refer to Appendix C for detergent data sheet). This detergent shall be stored in a 2500L plastic fabricated tank located within the plant room. Detergent is transferred to these plant room storage tanks by means of a bulk detergent offload/ transfer system consisting of a transfer pump (located within the plant room) and 5m hose with camlock connectors. Bunded compounds to these tanks were not necessary as the tanks themselves contain an integrated bund (refer to Appendix A - Carriage wash detergent storage tank) and the detergent to be stored can be safely released to the foul drainage via the plant room floor drainage system.

Bunded enclosures were not provided to the detergent off load point to the exterior of the plant rooms. This was not required as the off load pumping apparatus is designed to be located within the plant rooms and at no point shall detergent be stored on site but rather offloaded directly from delivery vehicles via hoses with camlock connectors (refer to Appendix H - pictures 1 & 2). A bunded enclosure would not have been feasible at this location as it would not be possible for delivery vehicles to drive in and out of the offload area and at the same time maintain an integral bund.

With reference to Appendix I – Detergent Delivery Risk Assessment, it can be seen that controls are in place to prevent against pollution of adjacent water courses. These include:

- **Overfilling of detergent tank** – the risk of tank overfilled during refill process is mitigated by level switches which shall stop the detergent tank from overflowing by automatically shutting off the offload detergent pump.
- **Release of detergent from external hose** – the risk of releasing an amount of detergent from the external hose system on refilling from the delivery vehicle is controlled by the presence of non-return valves to the offload pipework to prevent any discharge when disconnecting. Additionally, IBCs shall not be left on site with all refilling carried out directly from the delivery lorry.
- **Leaking of residual detergent from external hose or IBCs** – at the detergent injection point the likelihood of detergent remaining within the hose after disconnection and washing back down the hose is controlled by the installation of a non-return valve to the hose end.

To prevent the possible build-up of any harmful bacteria in the reclaimed water Biocide (bronopol) shall be introduced directly into the reclaimed water storage tank by means of small dosing pumps. In each plant room the Biocide is to be stored in 2No. 25L drums each stored on 40L spill trays. Due to the small quantities of biocide to be stored any spillages shall be dealt with using spill kits stored in each plant room.

Salt is to be stored in 25kg bags within the carriage wash plant room for use in the water softener for the reverse osmosis rinse process. This serves the function of applying water, with virtually all solids removed, to the vehicles to encourage the prevention of streaking on the windows. This is not environmentally hazardous.

Granular active carbon (refer to Appendix F) is to be used in the carriage wash reclaim water filtration process. Reclaimed water from the carriage wash is pumped through the active carbon filtration tank to remove excessive detergent. The effluent from this filtration process is discharged to the foul drainage via the interceptor sump tank. Granular active carbon is an organic, non hazardous, material and therefore no further containment measures are necessary.

4.2 Stabling Yard & Utilities Buildings

As part of the new depot scheme the existing stabling facilities to the south of the existing Hornsey site are to be reconfigured to provide stabling facilities for both the new and existing fleet of Thameslink trains. The new stabling yard contains a total of eight stabling roads with facilities required for internal train cleaning, CET, tanking, sanding operations and windscreen washer fluid replenishment.

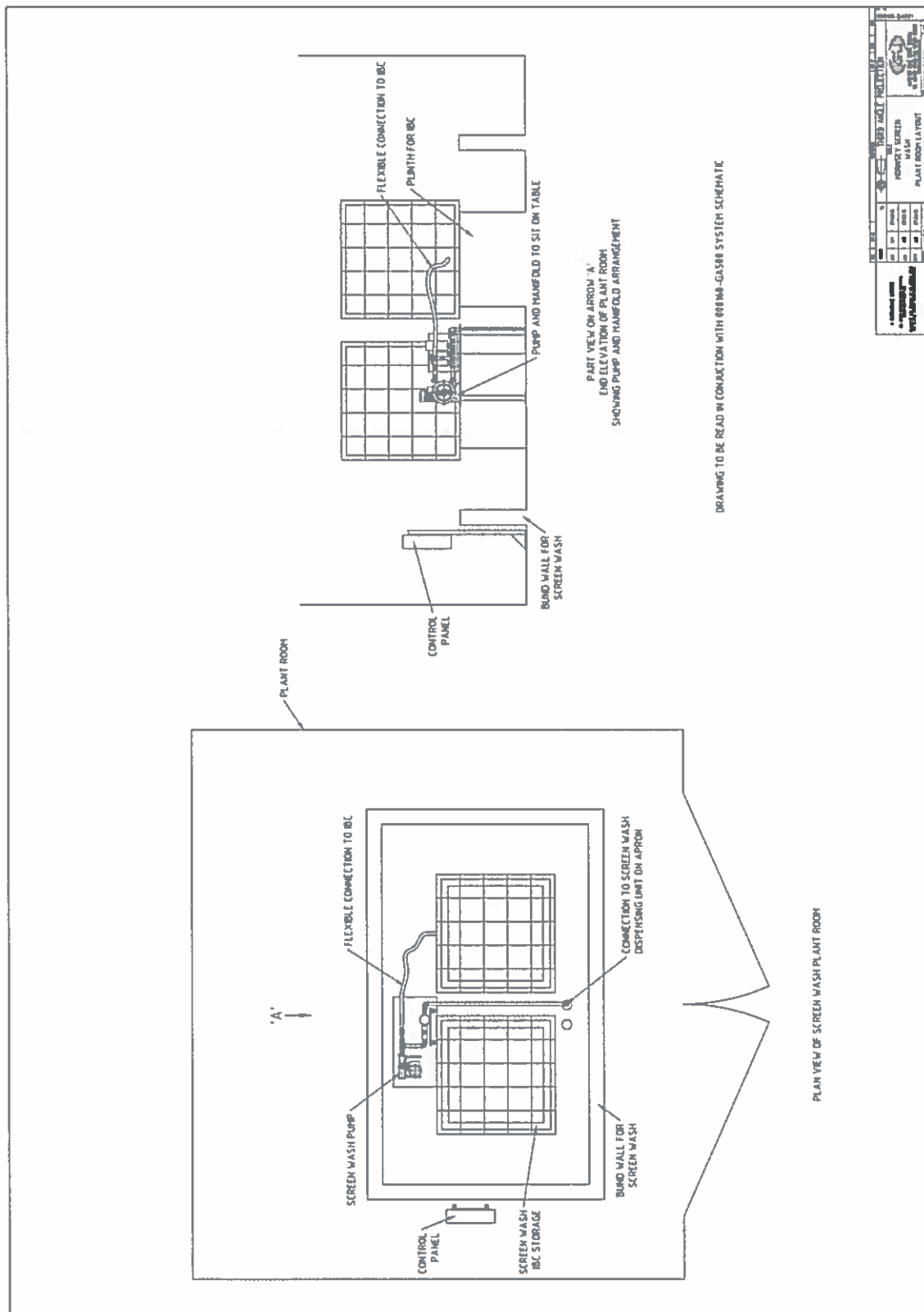
Provision for screen wash charging has been made at both ends of each of the four CET aprons; with an intermediate point on each of two longer aprons. The screen wash is pumped from an adjacent utilities building to each designated position on the CET aprons via a pipework network contained within the apron. A standpoint tap is installed to dispense the fluid at each location. 2No. 1000L intermediate bulk containers (IBCs) for the screen wash fluid are to be stored in a specially constructed 3000L bunded, covered enclosure in order to contain and control any emission of screenwash fluid. Screenwash is delivered directly to the enclosure and connect into the distribution pipework for pumping to the servicing points (refer to Appendix B – Screen Wash Storage Bund & Appendix 3 – picture 3).

Train cleaning equipment is to be stored in small lockable proprietary GRP storage containers located at three points on each of the four CET servicing aprons. These storage containers are designed with an integrated 5.5L drip tray to accommodate the 5L total volume of cleaning products to be stored within.

APPENDIX A – Carriage Wash Detergent Storage Tank



APPENDIX B – Screen Wash Storage Bund



APPENDIX C – Detergent Data Sheet



SAFETY DATA SHEET ADVANCED TRAINWASH DETERGENT

Page: 1
Compilation date: 08/09/2010
Revision date: 01/07/2015
Revision No: 3

Section 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name: ADVANCED TRAINWASH DETERGENT

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of substance / mixture: PC35: Washing and cleaning products (including solvent based products).

1.3. Details of the supplier of the safety data sheet

Company name: J1 Technologies Ltd
Unit 6, Centrepont
Marshall Stevens Way
Trafford Park
Manchester
M17 1PP
UK

Tel: +44 (0)161 875 2110

Fax: +44 (0) 0161 875 2129

Email: kevin.burgess@j1technologies.com

1.4. Emergency telephone number

Emergency tel: +44 (0) 7801 376 005
(office hours only)

Section 2: Hazards identification

2.1. Classification of the substance or mixture

Classification under CLP: Eye Dam. 1: H318

Most important adverse effects: Causes serious eye damage.

2.2. Label elements

Label elements:

Hazard statements: H318: Causes serious eye damage.

Signal words: Danger

Hazard pictograms: GHS05: Corrosion



Precautionary statements: P280: Wear protective gloves/protective clothing/eye protection/face protection.
P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove

[cont...]

SAFETY DATA SHEET
ADVANCED TRAINWASH DETERGENT

Page: 2

contact lenses, if present and easy to do. Continue rinsing.
P310: Immediately call a POISON CENTER/doctor/.

2.3. Other hazards

PBT: This product is not identified as a PBT/vPvB substance.

Section 3: Composition/information on ingredients

3.2. Mixtures

Hazardous ingredients:

ALCOHOLS, C9-11, ETHOXYLATED

EINECS	CAS	PBT / WEL	CLP Classification	Percent
-	68439-46-3	-	Acute Tox. 4: H302; Eye Dam. 1: H318	1-10%

SODIUM BENZOATE

-	532-32-1	-	Eye Irrit. 2: H319	1-10%
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Section 4: First aid measures

4.1. Description of first aid measures

Skin contact: Remove all contaminated clothes and footwear immediately unless stuck to skin. Wash immediately with plenty of soap and water.

Eye contact: Rinse immediately with water, holding eyelids open. Continue to rinse for at least 15 minutes and seek medical attention.

Ingestion: Wash out mouth with water. Do not induce vomiting. If conscious, give half a litre of water to drink immediately. Consult a doctor.

Inhalation: Remove casualty from exposure ensuring one's own safety whilst doing so.

4.2. Most important symptoms and effects, both acute and delayed

Skin contact: There may be irritation and redness at the site of contact.

Eye contact: There may be pain and redness.

Ingestion: There may be soreness and redness of the mouth and throat.

Inhalation: There may be mild irritation of respiratory tract.

4.3. Indication of any immediate medical attention and special treatment needed

Immediate / special treatment: Not applicable.

Section 5: Fire-fighting measures

5.1. Extinguishing media

Extinguishing media: Suitable extinguishing media for the surrounding fire should be used. Use water spray to cool containers.

[cont...]

SAFETY DATA SHEET
ADVANCED TRAINWASH DETERGENT

Page: 3

5.2. Special hazards arising from the substance or mixture

Exposure hazards: In combustion emits toxic fumes.

5.3. Advice for fire-fighters

Advice for fire-fighters: Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes.

Section 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Mark out the contaminated area with signs and prevent access to unauthorised personnel. Do not attempt to take action without suitable protective clothing - see section 8 of SDS. Turn leaking containers leak-side up to prevent the escape of liquid.

6.2. Environmental precautions

Environmental precautions: Do not discharge into drains or rivers. Contain the spillage using bunding.

6.3. Methods and material for containment and cleaning up

Clean-up procedures: Absorb into dry earth or sand. Transfer to a closable, labelled salvage container for disposal by an appropriate method.

6.4. Reference to other sections

Reference to other sections: Refer to section 8 of SDS.

Section 7: Handling and storage

7.1. Precautions for safe handling

Handling requirements: Avoid direct contact with the substance. Ensure there is sufficient ventilation of the area. Avoid the formation or spread of mists in the air.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in a cool, well ventilated area. Keep container tightly closed.

Suitable packaging: Polyethylene.

7.3. Specific end use(s)

Specific end use(s): No data available.

Section 8: Exposure controls/personal protection

8.1. Control parameters

Workplace exposure limits: No data available.

DNEL/PNEC Values

DNEL / PNEC No data available.

[cont...]

SAFETY DATA SHEET
ADVANCED TRAINWASH DETERGENT

Page: 4

8.2. Exposure controls

Engineering measures: Ensure there is sufficient ventilation of the area.
Respiratory protection: Respiratory protection not required.
Hand protection: Protective gloves.
Eye protection: Tightly fitting safety goggles. Ensure eye bath is to hand.
Skin protection: Protective clothing.
Environmental: Prevent from entering in public sewers or the immediate environment.

Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

State: Liquid	
Colour: Clear pale amber	
Odour: Characteristic odour	
Evaporation rate: No data available.	
Oxidising: No data available.	
Solubility in water: No data available.	
Viscosity: No data available.	
Boiling point/range°C: >100	Melting point/range°C: Not applicable.
Flammability limits %: lower: Not applicable.	upper: Not applicable.
Flash point°C: >93	Part.coeff. n-octanol/water: No data available.
Autoflammability°C: No data available.	Vapour pressure: No data available.
Relative density: No data available.	pH: 9-10
VOC g/l: No data available.	

9.2. Other information

Other information: No data available.

Section 10: Stability and reactivity

10.1. Reactivity

Reactivity: Stable under recommended transport or storage conditions.

10.2. Chemical stability

Chemical stability: Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous reactions: Hazardous reactions will not occur under normal transport or storage conditions.
Decomposition may occur on exposure to conditions or materials listed below.

10.4. Conditions to avoid

Conditions to avoid: Heat.

[cont...]

SAFETY DATA SHEET

ADVANCED TRAINWASH DETERGENT

Page: 5

10.5. Incompatible materials

Materials to avoid: Strong oxidising agents. Strong acids.

10.6. Hazardous decomposition products

Haz. decomp. products: In combustion emits toxic fumes of carbon dioxide / carbon monoxide.

Section 11: Toxicological information**11.1. Information on toxicological effects**

Relevant hazards for substance:

Hazard	Route	Basis
Serious eye damage/irritation	OPT	Hazardous: calculated

Symptoms / routes of exposure

Skin contact: There may be irritation and redness at the site of contact.

Eye contact: There may be pain and redness.

Ingestion: There may be soreness and redness of the mouth and throat.

Inhalation: There may be mild irritation of respiratory tract.

Section 12: Ecological information**12.1. Toxicity**

Hazardous ingredients:

ALCOHOLS, C9-11, ETHOXYLATED

ALGAE	72H ErC50	1-10	mg/l
DAPHNIA	48H EC50	1-10	mg/l
FISH	96H LC50	1-10	mg/l

12.2. Persistence and degradability

Persistence and degradability: No data available.

12.3. Bioaccumulative potential

Bioaccumulative potential: No data available.

12.4. Mobility in soil

Mobility: No data available.

12.5. Results of PBT and vPvB assessment

PBT Identification: This product is not identified as a PBT/vPvB substance.

12.6. Other adverse effects

Other adverse effects: Negligible ecotoxicity.

[cont...]

SAFETY DATA SHEET
ADVANCED TRAINWASH DETERGENT

Page: 6

Section 13: Disposal considerations

13.1. Waste treatment methods

Disposal operations: Transfer to a suitable container and arrange for collection by specialised disposal company.

Disposal of packaging: Undamaged packaging may be responsibly reused after proper cleaning

NB: The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

Section 14: Transport Information

Transport class: This product does not require a classification for transport.

Section 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Specific regulations: * The surfactant(s) contained in this preparation comply (complies) with the biodegradability criteria as laid down in Regulation (EC) No. 648/2004 on detergents. Data to support this assertion are held at the disposal of the competent authorities of the Member States and will be made available to them at their direct request or at the request of a detergent manufacturer.

15.2. Chemical Safety Assessment

Chemical safety assessment: A chemical safety assessment has not been carried out for the substance or the mixture by the supplier.

Section 16: Other Information

Other information

Other information: This safety data sheet is prepared in accordance with Commission Regulation (EU) No 453/2010.

* indicates text in the SDS which has changed since the last revision.

Phrases used in s.2 and s.3: H302: Harmful if swallowed.

H318: Causes serious eye damage.

H319: Causes serious eye irritation.

Legal disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.

[final page]

APPENDIX D – Biocide Data Sheet

1. Biocide Data Sheet	
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100. Biocide Data Sheet	

HEALTH AND SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

1.1 Product Name: SYSTEM BIOCID

1.2 Supplier : X.R.O. Chemical Services,
Units 1-3 The Cedars,
George Dutton Business Park,
Airfield Industrial Estate,
Ashbourne, Derbys., DE6 1HD
Tel; 01335 344551 Fax; 01335 348551 e-mail; r.cox@xro-chemserv.co.uk

1.3 Product Description: A concentrated biocide used to treat neutral processing solutions which may become infected with spoiling micro-organisms.
Product Code: UO

2. HAZARD IDENTIFICATION

- 2.1** Product is classified as 'Irritant' and 'Dangerous for the environment'.
2.2 Risk Phrases : R38 Irritating to skin.
R41 Risk of serious damage to eyes
R50 Very toxic to aquatic organisms.

3. COMPOSITION/INFORMATION ON INGREDIENTS.

- 3.1** An aqueous blend of biocide and solubiliser.
3.2 Hazardous ingredients:
- | | CAS No: | EINECS | % w.w | Nature of Hazard: |
|---------------------------------|---------|-----------|-------|--|
| 2-bromo-2-nitropropane-1,3-diol | 52-51-7 | 200-143-0 | 10-30 | Harmful, R21/22
Irritant, R37/38,41
Dangerous for the Environment, R50 |

4. FIRST AID MEASURES

- 4.1 Eyes:** Rinse immediately with plenty of water for at least 15 minutes. Seek medical advice.
4.2 Skin: Wash with soap and water. Remove any contaminated clothing.
4.3 Ingestion: Drink milk or water. Seek medical advice immediately. Do not induce vomiting.
4.4 Inhalation: Move to fresh air, keep warm and rest. Seek medical advice if feeling unwell.

5. FIRE FIGHTING MEASURES

The product is not classified as flammable but may support combustion. Use water to cool drums involved in a fire and use foam, dry powder or carbon dioxide to extinguish if the liquid does catch fire.

UO 1 of 4

6. ACCIDENTAL RELEASE MEASURES

Turn off sources of ignition. Wear protective clothing. Contain spillage with sand, earth or granules. Do not allow product to enter the natural surface drainage system. Scrape up and place in secure metal containers and seek advice of local authority before disposal.

7. HANDLING AND STORAGE

Store between 0 and 30° C in the containers provided and replace closure after use. Do not mix with other chemicals. Store away from sources of heat or ignition.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

For normal usage, wear nitrile rubber gloves and safety glasses. If splashing is a possibility, wear a solvent resistant apron and rubber boots.

8.1 Workplace Exposure Limits (WELs):

Substance	LTEL		STEL		Approx.%
	ppm	mg/m ³	ppm	mg/m ³	
2-methoxymethylethoxypropanol	50	308 (Sk)	-	-	20

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Appearance: Clear, colourless liquid.

9.2 Odour: Slight.

9.3 pH: 6

9.4 Density@20 ° C 1.09 g/ml

9.5 Flash Point: Non-flammable

9.6 Solubility in Water: Soluble.

10. STABILITY AND REACTIVITY

Stable under normal conditions of use and storage. Do not mix with other chemicals or use in alkaline process systems.

11. TOXICOLOGICAL INFORMATION

11.1 Contact with eyes : Causes irritation and redness

11.2 Contact with skin : Defatting action leads to soreness, dryness and cracking.

11.3 Ingested : May cause serious discomfort and illness.

11.4 Inhaled : Will cause irritation of mouth, nose and respiratory tract. Non-toxic by inhalation.

12. ECOLOGICAL INFORMATION

The biocide is moderately/partially eliminated from water by chemical or photolytic processes. The solubiliser is readily biodegradable according to OECD standards. Also there is no evidence of any bioaccumulation problems. The product does not fulfill the PBT or vPvB criteria

The product must not be allowed to enter soil, waterways or the natural drainage system.

UO 3 of 4

13. DISPOSAL CONSIDERATIONS

Do not allow to contaminate soil or the natural surface drainage system. Seek advice of local authority prior to disposal.

14. TRANSPORT INFORMATION

UN No: 3082 Name: Environmentally hazardous substance N.O.S. (2-bromo-2-nitropropane-1,3-diol solution) Hazard Class: Class 9 Packaging Group: III

15. REGULATORY INFORMATION

The preparation requires a formal COSHH assessment which should ensure that employees are aware of hazards/precautions detailed in this data sheet. The COSHH assessment should also ensure that recommended safety equipment is available and, where applicable, the exposure limits detailed in Section 8. are not being exceeded.

Label for Supply:

Risk Phrases:	R38	Irritating to skin.
	R41	Risk of serious damage to eyes..
	R50	Very toxic to aquatic organisms.

Safety Phrases:	S24/25	Avoid contact with eyes and skin.
	S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	S37/39	Wear suitable gloves and eye/face protection.
	S61	Avoid release to the environment. Refer to special instructions/safety data sheet.

U.K. Regulatory References: The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 which closely follows the European Commissions labeling guide (Annex VI to Directive 67/548/EEC).

The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 aligned with ADR.

Workplace Exposure Limits EH40.2005 (2nd edition published 2011).

REACH: Regulation 1907/2006/EC effective June 1st, 2007. The raw materials used in this preparation have been pre-registered in accord with the requirements of REACH.

16. OTHER INFORMATION

It is the responsibility of the user to ensure safe working conditions. The health hazards and general information contained within this Material Safety Data Sheet are given as a guide to the precautions required to maintain a safe working environment.

Revision Date 27.01.2012

Revision 01



SAFETY DATA SHEET SODIUM CHLORIDE

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name	SODIUM CHLORIDE
Product No.	102914, 102916, 102917, 102918, 102919, 102985, 102986, 102987, 102988, 102989, 102990, 104811, 105004, 105734, 106060, 106061, 105303, 105706, 105707, 106404, 105944, 102220, 105889, 102915, 102920, 104961, 102924, 105243, 300303, 107506, 108870, 109747, 110045, 110121, 110122, 110123, 110124, 110125, 110126, 110128, 110129, 110130, 110147, 110148, 110245, 110437, 110438, 111083, 111183, 111392, 110127, 300283, 300336, 301903, 105948
Synonyms, Trade Names	SALT, ROCK SALT, SALT PDV, SEA SALT, SANAL P, SUPERSEL GRADES, SALT TABLETS, BROXO 16-15, ROCK SALT WHITE, SNOW CLEAR, ROCK SALT WHITE, SALT MICROFINE, NATRIUMKLORID VINTERVÄGSALT, NATRIUMKLORID VACUUM BROXO 6-15, NATRIUMKLORID VACUUM REGESAL, NATRIUMKLORID VACUUM COMPACTED 6-1, NATRIUMKLORID STEN 1, 4-0, 4, NATRIUMKLORID STEN 3, 2-0, 8, SODIUM CHLORIDE (PDV) INDUSTRIAL, SEL ADOU, D'EAU AXAL PRO, SODIUM CHLORIDE (PDV) FCC ED.7, SODIUM CHLORIDE (PDV) ESCO
CAS-No.	7647-14-5
EC No.	231-598-3

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Industrial application
-----------------	------------------------

1.3. Details of the supplier of the safety data sheet

Supplier	Univar Aquarius House 6 Midpoint Business Park Thornbury Bradford BD3 7AY +44 1274 267300 +44 1274 267306 sds@univar.com
----------	--

1.4. Emergency telephone number

Emergency Contact Number (Office Hours)	+44 1274 267346
Emergency Contact Number (Outside Office Hours)	+441865 407333
Sds No.	20327

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

SODIUM CHLORIDE**Classification (EC 1272/2008)**

Physical and Chemical Hazards	Not classified.
Human health	Not classified.
Environment	Not classified.

Classification (67/548/EEC) Not classified.

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

Environment

The product is not expected to be hazardous to the environment.

2.2. Label elements

EC No. 231-598-3

Label in Accordance With (EC) No. 1272/2008

No pictogram required.

2.3. Other hazards**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS****3.1. Substances**

Product name	SODIUM CHLORIDE
CAS-No.	7647-14-5
EC No.	231-598-3

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****Inhalation**

Move the exposed person to fresh air at once. Rinse nose and mouth with water. Get medical attention if any discomfort continues.

Ingestion

Immediately rinse mouth and provide fresh air. Get medical attention if any discomfort continues. Do not induce vomiting.

Skin contact

Remove affected person from source of contamination. Remove contaminated clothing. Wash the skin immediately with soap and water. Get medical attention if any discomfort continues.

Eye contact

Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed**Eye contact**

May cause temporary eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

No recommendation given, but first aid may still be required in case of accidental exposure, inhalation or ingestion of this chemical. If in doubt, GET MEDICAL ATTENTION PROMPTLY!

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Extinguishing media**

This product is not flammable. Use fire-extinguishing media appropriate for surrounding materials.

5.2. Special hazards arising from the substance or mixture

SODIUM CHLORIDE

Specific hazards

When heated and in case of fire, irritating vapours/gases may be formed.

5.3. Advice for firefighters

Protective equipment for fire-fighters

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES6.1. Personal precautions, protective equipment and emergency procedures

Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions

Spillages or uncontrolled discharges into watercourses must be IMMEDIATELY alerted to the Environmental Agency or other appropriate regulatory body.

6.3. Methods and material for containment and cleaning up

Avoid generation and spreading of dust. Shovel into dry containers. Cover and move the containers. Flush the area with water. Collect spillage in containers, seal securely and deliver for disposal according to local regulations.

6.4. Reference to other sections

Wear protective clothing as described in Section 8 of this safety data sheet.

SECTION 7: HANDLING AND STORAGE7.1. Precautions for safe handling

Avoid spilling, skin and eye contact. Avoid handling which leads to dust formation.

7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed original container in a dry, cool and well-ventilated place. Keep in original container.

7.3. Specific end use(s)

The Identified uses for this product are detailed in Section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION8.1. Control parameters8.2. Exposure controls

Protective equipment



Engineering measures

Provide adequate ventilation. Observe occupational exposure limits and minimize the risk of inhalation of dust.

Respiratory equipment

No specific recommendation made, but protection against nuisance dust must be used when the general level exceeds 10 mg/m³.

Hand protection

Use suitable protective gloves if risk of skin contact.

Eye protection

Wear approved safety goggles.

SODIUM CHLORIDE

Hygiene measures

DO NOT SMOKE IN WORK AREA! Wash hands at the end of each work shift and before eating, smoking and using the toilet. Wash promptly if skin becomes contaminated. Promptly remove any clothing that becomes contaminated. When using do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	Crystalline powder. Solid Crystals or crystalline Granular
Colour	Varying.
Solubility	Soluble in water.
Initial boiling point and boiling range (°C)	1413 - 1465
Melting point (°C)	801 - 802
Relative density	2.165 - 2.170
Vapour pressure	2.4 mm Hg 747
pH-Value, Conc. Solution	7.5
Solubility Value (G/100G H ₂ O@20°C)	31
Partition Coefficient (N-Octanol/Water)	-3.0

9.2. Other information

Not determined.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stable under normal temperature conditions.

10.3. Possibility of hazardous reactions

No information required.

10.4. Conditions to avoid

Avoid excessive heat for prolonged periods of time.

10.5. Incompatible materials

Materials To Avoid

Not determined.

10.6. Hazardous decomposition products

Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity:

Acute Toxicity (Oral LD50)

3000 mg/kg Rat

Inhalation

Dust in high concentrations may irritate the respiratory system.

SODIUM CHLORIDE

Ingestion

May cause discomfort if swallowed.

Skin contact

Powder may irritate skin.

Eye contact

Particles in the eyes may cause irritation and smarting.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity

Not regarded as dangerous for the environment.

12.1. Toxicity

Acute Fish Toxicity

Not considered toxic to fish.

LC 50, 96 Hrs, Fish mg/l 6750

EC 50, 48 Hrs, Daphnia, mg/l 2024

IC 50, 72 Hrs, Algae, mg/l 3014

12.2. Persistence and degradability

Degradability

The product solely consists of inorganic compounds which are not biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential

No data available on bioaccumulation.

Partition coefficient -3.0

12.4. Mobility in soil

Mobility:

The product is soluble in water.

12.5. Results of PBT and vPvB assessment12.6. Other adverse effects

Not determined.

SECTION 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.

13.1. Waste treatment methods

Dispose of waste and residues in accordance with local authority requirements.

SECTION 14: TRANSPORT INFORMATION

General

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number14.2. UN proper shipping name14.3. Transport hazard class(es)

No information required.

SODIUM CHLORIDE

14.4. Packing group

No information required.

14.5. Environmental hazards

Environmentally Hazardous Substance/Marine Pollutant
No.

14.6. Special precautions for user

No information required.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

No information required.

SECTION 15: REGULATORY INFORMATION15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Legislation

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments. Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 with amendments.

Water hazard classification

WGK 1 WGK 1 WGK 1 WGK 1 WGK 1 WGK 1 WGK 1 WGK 1 WGK 1 WGK 1 WGK 1 WGK 1 WGK 1 WGK 1

15.2. Chemical Safety Assessment

No chemical safety assessment has been carried out.

SECTION 16: OTHER INFORMATION

Revision Date	27.01.2012
Revision	01
SDS No.	20327
Safety Data Sheet Status	Approved.
Date	14.11.2007
Signature	Jitendra Panchal
Risk Phrases In Full	
NC	Not classified.
Hazard Statements In Full	

Thameslink Rolling Stock Project
Hornsey Planning Condition Report – Storage of Oils, Fuels and Chemicals Document Ref: TRSP-HOR-PC-001 (Rev 2.0) Page 30 of 47

Chemviron Carbon

CARBSORB® 30 AND 40 Coal Based Granular Activated Carbon

DESCRIPTION

CARBSORB® 30 and 40 are bituminous coal based granular activated carbons designed to provide cost effective solution for water and liquid phase applications. CARBSORB® 30 and 40 offer a number of operating advantages over low cost Liquid phase carbon that exist in the market.

FEATURES

Coal based granular carbons have several properties which explain their performance in a wide range of applications.

- The adsorption capacity allows for effective removal of organic contaminants, pesticides, taste, and odour.
- Bituminous coal base produces a product with high hardness ensuring excellent resistance to abrasion caused by transport, mechanical stress, and backwashing.
- Product mesh size allows for limited pressure drop.
- CARBSORB® 30 and 40 comply with EN12915.

SELECTION

CARBSORB® 30 and 40 are suitable for use in the following applications:

- Potable water treatment
- Groundwater remediation
- Home water filtration
- Other industrial applications where removal of organics is required

CARBSORB® 30 and 40 have a typical mean particle diameter of 1.6 mm and 1.0 mm respectively. In general, the smaller the granule size, the better the adsorption performance, therefore CARBSORB® 40 should be selected. If the pressure drop is too high with CARBSORB® 40, CARBSORB® 30 should be selected.

PROPERTIES

SPECIFICATIONS	CARBSORB® 30	CARBSORB® 40
Iodine Number, min., mg/g	900	950
Hardness Number, min.	90	90
Moisture Content, as packed, max., % w/w	2	2
Mesh Size, US Sieve Series	8x30	12x40
> 8 mesh (2.36 mm), max. %	11	-
> 12 mesh (1.70 mm), max. %	-	5
< 30 mesh (0.60 mm), max. %	4	-
< 40 mesh (0.42mm), max. %	-	4

(Please refer to the Sales Specification Sheets, which state the Chemviron Carbon test method used to define the above specifications. Copies are available upon request.)

TYPICAL PROPERTIES	CARBSORB® 30	CARBSORB® 40
Methylene blue number	230	260
Total Surface Area, (N ₂ BET method ²), m ² /g	900	950
Backwashed and Drained Bed Density ¹ , kg/m ³	420	420
Effective size	0.9	0.6
Uniformity coefficient	1.8	1.8
Mean Particle Diameter, mm	1.6	1.0
Decoloration Half Length, cm	4	2

¹ Backwashed and drained density is used for adsorber sizing.

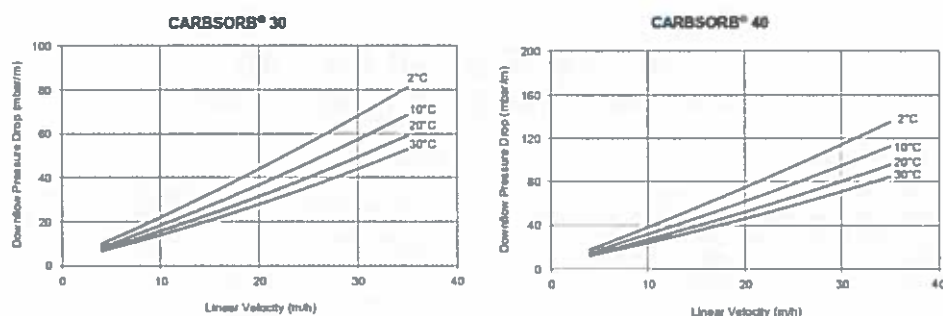
² Brunauer, Emmett and Teller, J.Am. Chem. Soc. 60, 309 (1938).

RECYCLING BY THERMAL REACTIVATION

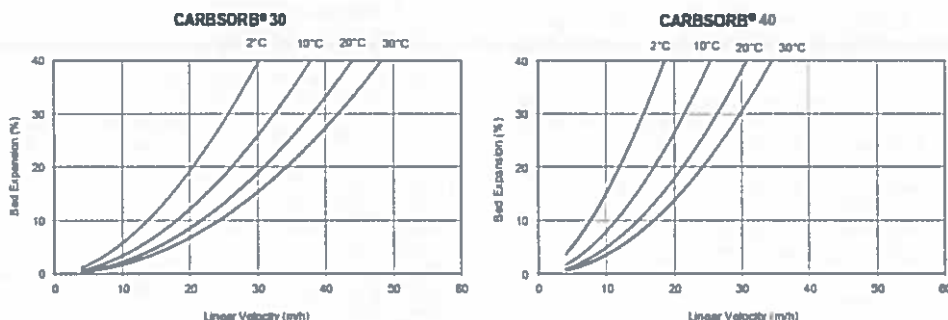
Once granular carbon is saturated or the treatment objective is reached, it can be recycled, by thermal reactivation, for reuse. Reactivation involves treating the spent carbon in a high temperature reactivation furnace to over 800°C. During this treatment process, the undesirable organics on the carbon are thermally destroyed. Recycling by thermal reactivation is a highly skilled process to ensure that spent carbon is returned to a reusable quality. Chemviron Carbon operates Europe's largest reactivation facilities and daily recycles large quantities of spent carbon for a diverse range of customers. Recycling activated carbon by thermal reactivation meets the environmental need to minimise waste, reducing CO₂ emissions and limiting the use of the world's resources.

Chemviron Carbon can offer a recycling service for CARBSORB® 30 and 40 to avoid disposal of the spent activated carbon.

TYPICAL PRESSURE DROP CURVES FOR A BACKWASHED AND SEGREGATED BED



TYPICAL BED EXPANSION CURVES FOR A BACKWASHED AND SEGREGATED BED



DESIGN INFORMATION

The design of a granular activated carbon treatment system will depend on the nature of the stream to be treated. The following are typical design parameters for organics removal with CARBSORB® 30 and 40:

- Superficial contact time 10- 60 min.
- Bed depth 1-4 m
- Linear velocity 5-15 m/h
- Backwash bed expansion 20 %

PACKAGING

- 25 kg bags
- Big bags
- Bulk tanker

SAFETY MESSAGE

Wet activated carbon preferentially removes oxygen from air. In closed or partially closed containers and vessels, oxygen depletion may reach hazardous levels. If workers are to enter a vessel containing carbon, appropriate sampling and work procedures for potentially low-oxygen spaces should be followed.

QUALITY

Each of our worldwide operations has achieved ISO 9001:2008 certification for their quality management system related to activated carbon. Chemviron Carbon guarantees the specifications against representative sampling. For food grade applications, it is recommended to check the quality of the initial effluent before putting the adsorber into service.

CHEMIRON CARBON

Chemviron Carbon, the European operation of Calgon Carbon Corporation, is a global manufacturer, supplier, and developer of granular activated carbon, innovative treatment systems, value added technologies, and services for optimising production processes and safely purifying the environment.

With our experience developed since the early years of the twentieth century, facilities around the world and a world-class team of over 1,200 employees, Calgon Carbon Corporation can provide the solutions to your most difficult purification challenges.

N.B. Chemviron Carbon reserves the right to change specifications without notice. All rights reserved for reproduction in part or in full without prior permission from Chemviron Carbon.

W-2080 – E – 05.04.2013

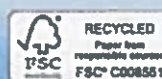


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Thameslink Rolling Stock Project
Hornsey Planning Condition Report – Storage of Oils, Fuels and Chemicals Document Ref: TRSP-HOR-PC-001 (Rev 2.0) Page 33 of 47



SAFETY DATA SHEET

SCREENWASH

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY

PRODUCT NAME: SCREENWASH

PART No.: R501/C926

APPLICATIONS: Windscreen wash bottle additive.

SUPPLIER: ARROW CHEMICALS LTD.
RAWDON ROAD,
MOIRA, SWADLINCOTE,
DERBYSHIRE DE12 6DA

EMERGENCY TELEPHONE(S): Tel. 01283 221044 Fax. 01283 550621

2 COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT NAME	EINECS No.	CAS No.	CONTENTS	SYMBOL	RISK (R No.)
2-BUTOXYETHANOL	203-905-0	111-78-2	5-10 %	Xn	20/21/22, 36/38
PROPAN-2-OL	200-661-7	67-83-0	30-60 %	F, Xi	11, 36, 67
TRIETHANOLAMINE	203-049-8	102-71-6	0-1 %	Xi	36/37/38
D030 ANIONIC SURFACTANT		68585-34-2	1-5 %	Xi	36/38

The full text for all R-phrases are shown in section 16.

3 HAZARDS IDENTIFICATION

Highly flammable
Irritating to eyes
Vapours may cause drowsiness and dizziness.

4 FIRST AID MEASURES

INHALATION: Move the exposed person to fresh air at once. Keep the affected person warm and at rest. Get prompt medical attention.

INGESTION: Rinse mouth thoroughly. DO NOT INDUCE VOMITING! Get medical attention.

SKIN: Wash off with water.

EYES: Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Contact physician if discomfort continues.

5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Fire can be extinguished using: Powder, foam or CO2.

6 ACCIDENTAL RELEASE MEASURES

SPILL CLEANUP METHODS: Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate. Absorb with inert, damp, noncombustible material, then flush area with water.

SCREENWASH

7 HANDLING AND STORAGE

USAGE PRECAUTIONS:	Keep away from heat, sparks and open flame
USAGE DESCRIPTION:	Apply to washer bottle diluting with water as required.
STORAGE PRECAUTIONS:	Store in a No Smoking area away from sources of heat, ignition, or strong sunlight.
STORAGE CRITERIA:	Flammable liquid storage.

8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

INGREDIENT NAME	CAS No	STD	LT EXP (8 hrs)	ST EXP (15 min)
2-BUTOXYETHANOL	111-76-2	OES	25 ppm(Sk)	50 ppm(Sk)
PROPAN-2-OL	67-63-0	OES	400 ppm	500 ppm
TRIETHANOLAMINE	102-71-6		No std.	No std.
PROTECTIVE GLOVES:	Chemical resistant gloves required for prolonged or repeated contact.			
EYE PROTECTION:	Wear approved chemical safety goggles where eye exposure is reasonably probable.			

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Liquid.	COLOUR:	Blue.
ODOUR/TASTE:	Alcohol.		
SOLUBILITY DESCRIPTION:	Very soluble in water.	SPECIFIC GRAVITY (Water=1):	0.80
FLASH POINT (°C):	12		
FLASH POINT METHOD:	P/M Pensky-Martens.		

10 STABILITY AND REACTIVITY

STABILITY:	Normally stable.
CONDITIONS TO AVOID:	Avoid heat, flames and other sources of ignition.

11 TOXICOLOGICAL INFORMATION

MEDICAL SYMPTOMS:	EYES AND MUCOUS MEMBRANES. Irritation of eyes and mucous membranes. NOSE. Irritation of nose due to vapour or dust contact. DIGESTIVE SYSTEM. Gastrointestinal symptoms, including upset stomach. SKIN. Skin irritation. RESPIRATORY SYSTEM. Upper respiratory irritation. MOUTH AND THROAT. Irritation of mouth and throat.
-------------------	--

12 ECOLOGICAL INFORMATION

DEGRADABILITY:	All organic material contained in this preparation readily biodegrades
----------------	--

13 DISPOSAL CONSIDERATIONS

DISPOSAL METHODS:	Dispose of small quantities to foul sewer, diluting with plenty of water. Larger quantities should be disposed of via reputable waste disposal contractor as flammable liquid waste.
-------------------	--

14 TRANSPORT INFORMATION

LABEL FOR CONVEYANCE.



ROAD:			
UN No:	1903	ADR CLASS No:	3.2
RAIL:			

SCREENWASH

SEA:
UN SEA: 1993

AIR:
UN AIR: 1993

IMDG Page No: 3230

15 REGULATORY INFORMATION

LABEL FOR SUPPLY:



HIGHLY FLAMMABLE



IRRITANT

RISK PHRASES:	R-11	Highly flammable
	R-36	Irritating to eyes.
	R-67	Vapours may cause drowsiness and dizziness.
SAFETY PHRASES:	S-16	Keep away from sources of ignition - No Smoking.
	S-25	Avoid contact with eyes.
	S-26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	S-35	This material and its container must be disposed of in a safe way.
	S-51	Use only in well ventilated areas.
	S-9	Keep container in a well ventilated place.
UK REGULATORY REFERENCES:	C.H.I.P. The Chemicals (Hazard Information and Packaging for Supply) Regulations The Carriage of Dangerous Goods by Road and Rail Regulations	
GUIDANCE NOTES:	Occupational Exposure Limits EH40	

16 OTHER INFORMATION

USER NOTES: This preparation requires a formal COSHH assessment which should ensure that employees are aware of the hazards/precautions detailed in this data sheet. The COSHH assessment should also ensure that recommended safety equipment is available and, where applicable, the exposure limits detailed in section 8 are not being exceeded

REVISION DATE: 08/10/2002

REVISION No. /REPLACES SDS ISSUED: 1: 20/08/2001

R-PHRASES (Full Text):	R-11	Highly flammable
	R-36	Irritating to eyes.
	R-20/21/22	Harmful by inhalation, in contact with skin and if swallowed.
	R-36/37/38	Irritating to eyes, respiratory system and skin.
	R-36/38	Irritating to eyes and skin.
	R-67	Vapours may cause drowsiness and dizziness.

Section 16 cont/d

SCREENWASH

INTRODUCTION

Screenwash is an isopropyl alcohol based screenwash - bottle concentrate for use in winter conditions. Provides an efficient, non smearing screen cleaning action and eliminates freezing in sub-zero conditions.

WHERE TO USE

Screenwash should be diluted with the appropriate amount of water for the prevailing conditions and poured into the vehicle wash bottle container.

HOW TO USE

Use all year round as a vehicle screenwash concentrate but especially useful in winter to prevent freezing.

Use at the following dilutions, depending on temperature:

Dilution Rate Effective Protection

Undiluted	- 30°C
1:4	- 10°C
1:7	- 7°C
1:10	- 4°C

In non freezing conditions, Screenwash should be used diluted 1:20 with water to provide for removal of grease smears, traffic film, flies, etc.

Avoid prolonged contact on vehicle paintwork of the undiluted product.

APPENDIX H – Pictures



Picture 1: North Carriage Wash Machine detergent offload point with Armco barrier



Picture 2: Carriage Wash Machine detergent offload hose & non-return valves



Picture 3: Screenwash impervious storage bund

APPENDIX I – CWM Maintenance Risk Assessment

OCCUPATION, JOB OR TASK	CWM Detergent Off-load	DATE OF THIS ASSESSMENT	17/11/15	Ref No.	RA-PC-01
-------------------------	------------------------	-------------------------	----------	---------	----------

1	LOC ATI ON	Horsey North & South Carriage Wash Machine Plant Room Buildings	NEXT REVIEW DATE	17/05/16	PAGE	1	OF	2	ISSUE No.	2
---	------------------	---	------------------	----------	------	---	----	---	-----------	---

No. OF STAFF AT RISK	1 +	HOW OFTEN	Daily	SIGNED	DESIGNATION	Group Quality & Safety Systems Manager/GTR/Siemens/VFL
----------------------	-----	-----------	-------	--------	-------------	--

		HAZARD	DEGREE OF RISK			RESIDUAL RISK & PRIORITY - If further action is required details to be entered at bottom of page				
			L	S	T	L	S	T	Action Required	
TASK/ACTIVITY			1-5	1-5	1-25	1-5	1-5	1-25	Yes/No	Priority
Handling of detergent Intermediate bulk containers (IBCs)	Risk of personal injury – corrosive substance in concentrate form		5	3	15				No	
Maintenance staff working on the wash/operation of Carriage Wash Machines	Accidental discharge of detergent from storage tank		2	5	10	2	1	2	No	
Detergent off loading to CMW storage tank	Detergent tank overfilled during refill process.		4	3	12	1	3	3	No	

Detergent off loading to CMW storage stank	Release of detergent from the external hose offload system on refilling from IBCs leading to contamination of Mosselle Brook, local controlled watercourse etc					<ul style="list-style-type: none"> plant room floor drainage is routed to adjacent foul drainage. spill kits to be kept in plant room stores (inc. dry earth or sand). pollution incident response plan/ emergency spill procedure available as part of method statement and contents briefed to operatives. activity risk assessment to be completed by an authorised person and method statement in place for all detergent deliveries to site detergent delivery operatives to be trained on local offload procedures and in spill management procedures. 2No. non-return valves are to be fitted to the detergent offload hoses to prevent any accidental discharge of detergent. temporary bund/ drip tray to be placed below detergent connection point. Gaskets to camlock connectors therefore no dripping of detergent expected. Armco barriers fitted to front of hose/ offload point 	No		
Detergent offloading to CMW storage stank	Leakage of residual detergent from hose or IBC's stored on site	5	2	10	<ul style="list-style-type: none"> pollution incident response plan to be available as part of method statement and contents briefed to operatives. activity risk assessment completed by an authorised person and method statement in place for all detergent deliveries to site detergent delivery operatives to be trained on local offload procedures and in spill management procedures. spill kits to be kept in plant room stores (inc. inert absorbent material - dry earth or sand for transfer to labeled salvage container in accordance with local authority regulations). non-return valves to be fitted to the end of the detergent hoses to prevent any discharge of residual detergent when disconnecting hoses to IBCs. detergent is to be off-loaded directly from vehicle. No detergent IBCs to be stored on site. 	No	1	2	2

APPENDIX J – Site Layout Plan



