SAFETY DATA SHEET

Version 17.2 replaces Version 17.1
Revision date: 22.08.2018
According to (EU) No. 2015/830

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

1.1 Product identifier: **AUTOGLO® AL-4B**

1.2 Relevant identified uses of the mixture and uses advised against:

Relevant identified uses: Fluorescent penetrant used in Non Destructive Testing (NDT) inspection.

Uses advised against: This product is not recommended for any use other than the identified uses above.

1.3 Details of the supplier of the safety data sheet

Manufacturer: Magnaflux® (A Division of ITW Ltd)

Address: Faraday Road, South Dorcan Industrial Estate, Swindon, UK

Postcode: SN3 5HE

Telephone/fax number:
Telephone: +44 (0)1793 524566
Fax: +44 (0)1793 490459
Web: www.eu.magnaflux.com

Email address of competent person responsible for SDS: support.eu@magnaflux.com

National contact: None appointed

1.4 Emergency telephone number: DURING OFFICE HOURS, CALL
T: +44 (0)1793 524566 (English only)

Opening hours: Office hours (GMT) Monday - Thursday 8am - 5pm, Friday 8am - 4pm
OUT OF OFFICE HOURS, CALL
T: +44(0)203 394 9866

SECTION 2 HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:

Classification according to Regulation (EC) No 1272/2008 (CLP):

Physical and Chemical Hazard:
None

Health Hazard:
Eye Dam. 1 H318

Environmental Hazard:
None

Additional information No additional information.

For full text of hazard statements and EU hazard statements see SECTION 16.

2.2 Label Elements:

Labelling according to regulation (EC) No 1272/2008 [CLP]

Hazard Pictograms:

Signal Word:	Danger
Hazard Statement(s):	H318 Causes serious eye damage.
Precautionary Statement(s):	P280: Wear protective gloves/protective clothing/eye protection/face protection. P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. P310: Immediately call a POISON CENTRE or doctor/physician.
Supplementary Precautionary Statement(s):	None.
Supplementary Hazard Information (EU)	No Supplemental Information.
Hazard Determining Component(s)	Oxirane, 2-methyl-, polymer with oxirane, mono(2-propylheptyl)ether.

2.3 Other hazards:

Spilled liquid could present a slip hazard.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

3.2 Mixtures

Ingredient Name	CAS No	EC No	REACH Registration Number	% Weight	Classification according to Regulation (EC) No 1272/2008 [CLP]	Additional information
2-(2-butoxyethoxy) ethanol	112-34-5	203-961-6	01-2119475104-44	<40	Eye Irrit. 2 – H319	None
Oxirane, 2-methyl-, polymer with oxirane, mono(2-propylheptyl)ether	166736-08-9		Starting materials listed.	<10	Acute Tox. 4 – H302 Eye Dam. 1 – H318	None

Note: Hazard statement(s) in this section apply only to raw materials, not necessarily to finished products.
**See Section 16 for hazard statement(s) text in full.*

SECTION 4 FIRST AID MEASURES

4.1 Description of first aid measures:

General notes:	If symptoms persist, seek medical attention. Show this safety data sheet to the doctor in attendance.
Following inhalation:	Remove to fresh air. Keep at rest. If not breathing give artificial respiration. Seek medical attention if symptoms occur.
Following skin contact:	Flush with water, use soap if available. Contaminated clothing should be washed before re-use.

Following eye contact: Flush eyes with large amounts of water for at least 15 minutes. Check for and remove any contact lenses if easy to do. Continue rinsing. Seek medical attention immediately.

Following ingestion: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Seek medical attention immediately.

Self-protection of the first aider: No action shall be taken involving any personal risk or without suitable training. If it is suspected that the mixture is still present, wear appropriate personal protective equipment.

4.2 Most important symptoms, both acute and delayed:
Risk of serious damage to eyes. No delayed effects known.

4.3 Indication of any immediate medical attention and special treatment needed:
Eye wash bottle must be readily available when product is in use.

SECTION 5 FIREFIGHTING MEASURES

5.1 Extinguishing media:

Suitable extinguishing media: Carbon dioxide, foam, dry chemical, water fog or spray.

Unsuitable extinguishing media: Do not use water jet.

5.2 Special hazards arising from the substance or mixture: Evacuate immediate area. If possible keep unaffected containers cool with water spray.

Hazardous combustion products: Smoke, soot and oxides of carbon. Burning vapour may give off toxic fumes.

5.3 Advice for fire-fighter:
Self contained breathing apparatus and full protective clothing must be worn if necessary.

SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:
Suitable protective equipment (see Section 8) should be worn to prevent any contamination of skin, eyes and personal clothing.

For non-emergency personnel: Remove ignition sources. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Vapours are likely to accumulate in low areas.

For emergency responders: Keep unnecessary people at a safe distance.
Remove ignition sources. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Vapours are likely to accumulate in low areas.

6.2 Environmental precautions:
Prevent liquid from entering drains, sewers and watercourses. Notify the Environment Agency or water authorities if a major spillage occurs. Prevent product from contaminating soil.

6.3 Methods and material for containment and cleaning up:

Eliminate sources of ignition. Take measures to prevent the build-up of electrostatic charge.

For containment:	Contain spillage, and then collect with non-combustible absorbent material (e.g. Sand, earth, diatomaceous earth, vermiculite). Place in a container for disposal according to local/national regulations. Large spills should be pumped into containers pending disposal. Dispose of waste according to local/national regulations.
For cleaning up:	Rinse site with copious amounts of water, which should not be allowed into drains, sewers or watercourses.
Other information:	No other information.

6.4 Reference to other sections:

For Personal Protective Equipment see Section 8. For disposal information see Section 13.

SECTION 7 HANDLING & STORAGE

7.1 Precautions for safer handling:

Protective Measures:	Wear suitable protective clothing such as chemical resistant gloves, apron and goggles/face mask to protect from splashes. Ensure adequate exhaust ventilation when in use. Avoid contact with skin and eyes. Do not breathe product spray or mist.
Measures to prevent fire:	Keep away from sources of ignition. Take measures to prevent the build-up of electrostatic charge.
Advice on general occupational hygiene:	Wash thoroughly after handling.

7.2 Conditions for safe storage, including any incompatibilities:

Technical measures and storage conditions:	Store in a cool dry area away from heat and sources of ignition. Keep containers closed when not in use.
Packaging materials:	Store in original container.
Requirements for storage rooms and vessels:	Recommended storage temperature 10 ºC to 30 ºC. Keep containers out of direct sunlight.
Further information on storage conditions:	Rotate stock and check regularly for damaged items.

7.3 Specific end use(s):

Recommendations:	Use only for Non Destructive Testing (NDT) applications.
Industrial sector specific solutions:	See product data sheet for further information.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters:

Occupational exposure limit values:

Occupational exposure figures have been set for some of the components of this preparation based on GESTIS International Limit Values or manufacturers' recommendation.

Ingredient name	Country	Limit value - 8 hours		Limit value - short term	
		ppm	mg /m³	ppm	mg /m³
2-(2-butoxyethoxy) Ethanol	UK	10	67.5	15	101.2
	Germany (AGS)	10 (1)	67 (1)	15 (1) (2)	100 (1) (2)
	Germany (DFG)	10 (1) (2)	67 (1) (2)	15 (1) (2) (3)	100.5 (1) (2) (3)
	Sweden	15	100	30 (1)	200 (1)
NOTES: Germany (AGS): (1) Inhalable aerosol and vapour. (2) 15 minutes reference period. Germany (DGK): (1) MAK value applies for the sum of the concentrations of 2-(2-butoxyethoxy)ethanol and its acetate in air. (2) Inhalable fraction and vapour. (3) 15 minutes reference period. Sweden: (1) short-term value, 15 minutes average value.					
Data obtained from GESTIS International Limit Values, EH40, supplier's SDS.					

Note: Where no specific short-term exposure limit is listed, a figure three times the long-term exposure limit should be used.

Derived No Effect Level (DNEL) – 2-(2-butoxyethoxy)ethanol

End User	Exposure Route	Exposure Time	Effects	DNEL
Worker	Inhalation	Long term	Systemic	67.5 mg/m³
Worker	Inhalation	Long term	Local	67.5 mg/m³

Note: The Derived No Effect Level (DNEL) is an estimated safe level of exposure that is derived from toxicity data in accordance with specific guidance within the European REACH regulation. The DNEL may differ from an Occupational Exposure Limit (OEL) for the same chemical. OELs may be recommended by an individual company, a government regulatory body or an expert organization, such as the Scientific Committee for Occupational Exposure Limits (SCOEL) or the American Conference of Governmental Industrial Hygenists (ACGIH). OELs are considered to be safe exposure levels for a typical worker in an occupational setting for an 8-hour work shift, 40 hour work week, as a time weighted average (TWA) or a 15 minute short-term exposure limit (STEL). While also considered to be protective of health, OELs are derived by a process different from that of REACH.

Predicted No Effect Concentration (PNEC)

	2-(2-butoxyethoxy)ethanol
Water - Fresh Water	1 mg/l
Water - Marine Water	0.1 mg/l
Water - Intermittent release	3.9 mg/l
Sediment - Fresh water	4 mg/l
Sediment - Marine water	0.4 mg/l
Soil	0.4 mg/l
Sewage Treatment plant	200 mg/l

8.2 Exposure controls:

Concentrations of product vapours and mists in the working atmosphere must be kept as low as is reasonably practicable. Exposure should be minimised by the use of appropriate containment, engineering control and ventilation measures. Where this is not possible, personal protective equipment should be worn as indicated below where appropriate

Appropriate engineering controls: Provide eye wash station.

Personal protection equipment:

Eye and face protection:	Safety glasses with side-shields conforming to EN166.
Skin protection - hand:	Protective gloves conforming to EN374-3. Use chemical resistant gloves recommended by glove manufacturer as being suitable for glycol ethers, if hand exposure is unavoidable. Butyl and Neoprene are suitable, although other types may be more suitable in other circumstances. For prolonged exposure, recommended gloves with protective index 6, > 480 minutes permeation time according to EN374. As the product is a preparation, consult the glove manufacturer for exact breakthrough time. Glove manufacturer's directions for use should be observed.
Skin protection – other:	Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of dangerous substance at the specific workplace.
Respiratory protection:	Use a respirator with appropriate canister type filter cartridge if spraying in confined or unventilated areas. For nuisance exposures use a chemical respirator with organic vapour cartridge. Use respiratory equipment with gas filter type A2P3 (EN141). For higher level protection use type ABEK-P3 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under CEN standards.
Thermal hazards:	Not applicable
Environmental exposure controls:	Avoid any release to the environment.

SECTION 9 PHYSICAL & CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Appearance:	Yellow/green liquid.
Odour:	Bland.
Odour threshold:	No data available.
pH:	Neutral.
Melting point/freezing point:	No data available.
Initial boiling point and boiling range:	> 100 °C
Flash point (PMCC):	> 100 °C (minimum)
Evaporation rate (BuAC = 100):	0.1.
Flammability (solid, gas) (Limits in air):	No data available.
Upper/lower flammability or explosive limits:	No data available.
Vapour pressure:	No data available.
Vapour density (Air = 1):	> 1
Relative density:	0.998 g/cm^3
Solubility:	100%.

Partition coefficient: n-octanol/water:	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity (ASTM D445):	5.0 mm^2/s at 38 °C.
Explosive properties:	No data available.
Oxidising properties:	No data available.

Note: properties relate to the bulk product only unless otherwise stated.

9.2 Other information:
No other information.

SECTION 10 STABILITY & REACTIVITY

10.1	**Reactivity:**	No data available.
10.2	**Chemical stability**	Stable under normal conditions of use and applications.
10.3	**Possibility of hazardous reactions:**	No data available.
10.4	**Conditions to avoid:**	Keep away from sources of ignition, hot surfaces and direct sun light.
10.5	**Incompatible materials:**	Strong oxidising agents. Acids and alkalis.
10.6	**Hazardous decomposition materials:**	None under normal conditions of use. Smoke, soot and oxides of carbon on combustion.

SECTION 11 TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects: based on data for component materials.

Acute toxicity - oral:	Based on the available data, the classification criteria are not met.
Acute toxicity – dermal:	Based on the available data, the classification criteria are not met.
Acute toxicity – inhalation:	Based on the available data, the classification criteria are not met.
Skin corrosion/irritation:	Based on the available data, the classification criteria are not met.
Serious eye damage/irritation:	Eye Dam. 1 – H318: Causes serious eye damage.
Respiratory sensitisation:	Data lacking.
Skin sensitisation:	Based on the available data, the classification criteria are not met.
Germ cell mutagenicity:	Based on the available data, the classification criteria are not met.
Carcinogencity:	Data lacking.
Reproductive toxicity:	Based on the available data, the classification criteria are not met.
STOT single exposure:	Based on the available data, the classification criteria are not met.
STOT repeated exposure:	Based on the available data, the classification criteria are not met.

Aspiration hazard: Data lacking.

Information on likely Routes of Exposure and Potential Health Effects:

Inhalation: Inhalation of high product concentrations when spraying can be irritating to the respiratory tract.

Ingestion: Ingestion may cause irritation of the mouth, throat and digestive tract. Gastrointestinal symptoms, including upset stomach.

Eye contact: Causes serious eye damage.

Skin contact: Frequent or prolonged contact with the product may produce irritation. May cause defatting of the skin.

Toxicity Test Results: based on data for component materials, where available.

2-(2-butoxyethoxy)ethanol

Acute Toxicity – oral	LD50 (rat)	> 2000 mg/kg
Acute Toxicity – dermal	LD50 (rabbit)	> 2000 mg/kg
Acute Toxicity – inhalation	LC50 (rat)	No data available.

Oxirane, 2-methyl-, polymer with oxirane, mono(2-propylheptyl) ether

Acute Toxicity – oral	LD50 (rat)	> 300 – 2000 mg/kg
Acute Toxicity – dermal	LD50 (rat)	Not determined
Acute Toxicity – inhalation	LC50 (rat)	Not determined

Other Information: No other information.

SECTION 12 ECOLOGICAL INFORMATION

Based on data for component materials

12.1 Toxicity:

2-(2-butoxyethoxy)ethanol

Fish	Lepomis macrochirus	LC50	96h	1,300 mg/l
Aquatic Invertebrates	Daphnia magna	EC50	48h	> 100 mg/l
Aquatic Plants	Desmodesmus subspicatus	EC50	96h	> 100 mg/l
Microorganisms	Pseudomonas putida	LC50	16h	1,170 mg/l

Oxirane, 2-methyl-, polymer with oxirane, mono(2-propylheptyl) ether

Fish	Brachydanio rerio	LC50	96h	> 10 – 100 mg/l (OECD Guideline 203)
Aquatic Invertebrates	Daphnia magna	EC50	48h	> 10 – 100 mg/l
Aquatic Plants	Scenedesmus subspicatus	EC50	72h	> 10 – 100 mg/l
Microorganisms	Activated sludge	EC50	0.5h	Not determined

12.2 Persistence and degradability: Readily biodegradable.

12.3 Bioaccumulative potential: This preparation does not contain any substances expected to be bioaccumulative.

Partition coefficient: n-octanol/water (log Kow): 2-(2-butoxyethoxy)ethanol: LogKow=0.56

Bioconcentration factor (BCF): No data available.

12.4 Mobility in soil: This product is soluble in water.

12.5	**Results of PBT and vPvB assessment:**	This mixture does not contain any substances that are assessed to be a PBT or vPvB.
12.6	**Other adverse effects:**	No data available.

SECTION 13 DISPOSAL CONSIDERATIONS

13.1 **Waste treatment methods:**
Dispose of waste and residues in accordance with local authority requirements. Seek the advice of an approved waste disposal contractor for disposal at a licensed facility in accordance with national legislation.

Product/packing disposal:	Empty containers may contain residues. Do NOT remove labels.
Waste codes/waste designations according to LoW:	None assigned.

NOTE: Waste codes are assigned based upon the most common uses for this material and may not reflect contaminants resulting from actual use. Waste producers need to assess the actual process used when generating the waste and its contaminants in order to assign the proper waste code(s).

Waste treatment – relevant information:	Dispose of waste and residues in accordance with local authority requirements. Seek the advice of an approved waste disposal contractor for disposal at a licensed facility in accordance with national legislation
Sewage disposal – relevant information:	Do not empty down the drain.
Other disposal recommendations:	Use a licensed waste contractor.

SECTION 14 TRANSPORT INFORMATION

14.1	**UN number:**	ADR/RID:	-
		IMDG:	-
		IATA:	-
14.2	**UN proper shipping name:**	ADR/RID:	Not dangerous goods
		IMDG:	Not dangerous goods
		IATA:	Not dangerous goods
14.3	**Transport hazard class(es):**	ADR/RID:	-
		IMDG:	-
		IATA:	-
14.4	**Packing group:**	ADR/RID:	-
		IMDG:	-
		IATA:	-
14.5	**Environmental hazards:**	ADR/RID:	-
		IMDG:	-
		IATA:	-

14.6 **Special precautions for user:**
Not applicable.

14.7 **Transport in bulk according to Annex II of Marpol 73/78 and the IBC code:**
Not applicable.

SECTION 15 REGULATORY INFORMATION

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

EU Regulations:

This data sheet complies with the requirements of Regulation (EC) No 1272/2008 on the classification, labelling and packaging of substances and mixtures.
Safety data sheet as required by EU Regulations 1907/2006 and REACH Annex II Amendment (EU) No. 2015/830.
Regulation (EC) No 648/2004 on detergents.

Information according to 2013/10/EU and 2008/47/EC amendment of the aerosol directive 75/324/EEC.

Not applicable - this product is not an aerosol.

National regulations (Germany):

Wassergefahrdungklasse (water hazard class):	WGK 1 – Low Hazard to waters.
TechnischeAnleitungLuft (TA-Luft):	30 – 45% Class 5.2.5 Organic Substances, except dusts. 55 – 70% Water

15.2 Chemical safety assessment:

No chemical safety assessment has been carried out for this mixture by the supplier.

SECTION 16 OTHER INFORMATION

(i) Indication of changes:

Version 17.2 updated in Section 1.3.

Vertical lines on the left hand side indicate an amendment from the previous version.

(ii) Abbreviations and acronyms:

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road. (***A****ccord européen relatif au transport international des marchandises* ***D****angereuses par* ***R****oute)*
CAS No.	Chemical Abstracts Service number
CEN	European Committee for Standardisation
CLP	Classification, Labelling Packaging Regulation; Regulation (EC) No 1272/2008
ECHA	European Chemicals Agency
EC50	Half Maximal Effective Concentration
EC number	EINECS and ELINCS number
EINECS	European Inventory of Existing Commercial Substances
ELINCS	European List of notified Chemical Substances
GHS	Globally Harmonized System
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Lethal Concentration to 50% of a test population
LD50	Lethal Dose to 50% of a test population
MPI	Magnetic Particle Inspection
NDT	Non-Destructive Testing
OEL	Occupational Exposure Limit
PBT	Persistent, Bioaccumulative and Toxic Substance
PMCC	Pensky-Martens closed cup method
PPE	Personal Protection Equipment
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation EC (No) 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail (Reglement International concernant le transport des marchandises Dangereuses par chemin de fer)

SDS	Safety Data Sheet
STOT RE	Specific Target Organ Toxicity, Repeat Exposure
STOT SE	Specific Target Organ Toxicity, Single Exposure
TA-Luft	Technical Instructions on Air Quality Control (Technische Anleitung zur Reinhaltung der *Luft)*
vPvB	Very Persistent and Very Bioaccumulative
WEL	Workplace Exposure Limit
WGK	German Water Hazard Class (Wassergefährdungsklasse)

(iii) Key literature and sources of data:

- Supplier's safety data sheets for components listed in Section 3.
- European Chemicals Agency, http://echa.europa.eu/
- GESTIS International Limit Values Database, http://limitvalue.ifa.dguv.de/Webform_gw.aspx
- Occupational Exposure Limits EH40/2005.
- Regulation (EU) No. 2015/830.
- Control of Substances Hazardous to Health Regulations 2002.
- Hazardous waste regulations 2005.
- Health & Safety at Work Act 1974.
- Regulation (EC) No. 1907/2006 (REACH).
- Regulation (EC) No.1272/2008 (CLP).
- IFA Database on Hazardous Substances: http://www.dguv.de/ifa/Gefahrstoffdatenbanken/GESTIS-Stoffdatenbank/index-2.jsp
- http://logkow.cisti.nrc.ca/logkow/index.jsp
- Regulation (EC) No. 648/2004 on detergents.
- http://webrigoletto.uba.de/rigoletto/public/searchRequest.do?event=request

(iv) Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 (CLP):

Classification according to Regulation (EC) No 1272/2008	Classification procedure
Eye Dam. 1 H318	Calculation.

(v) Hazard statements (number and full text):

H302: Harmful if swallowed.
H318: Causes serious eye damage.
H319: Causes serious eye irritation.

Hazard Class Category Code (number and full text):

Acute Tox. 4: Acute Toxicity
Eye Dam. 1: Serious eye damage/eye irritation
Eye Irrit. 2: Serious eye damage/eye irritation

Relevant precautionary statements (number and full text):

P280: Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTRE or doctor/physician.

(vi) Training advice:

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene. Chemical hazard risk assessment. Provide adequate information, instruction and training to operators.

DISCLAIMER

The information and recommendations contained herein are based upon data believed to be up-to-date and correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information and recommendations contained herein. We accept no responsibility and disclaim all liability for any harmful effects that may be caused by (incorrect) use, handling, purchase, resale, or exposure to our product. Customers and users of our product must comply with all applicable health and safety laws, regulations, and orders. In particular, they are under an obligation to carry out a risk assessment for the particular work places and to take adequate risk management measures in accordance with the national implementation legislation of EU Directives 89/391/EEC and 98/24/EC amended by Directive 2014/27/EU.

Revision summary:	**Revision Comments**	This SDS is valid from the Revision Date. If you require a SDS for the product manufactured before the revision date please contact us at support.eu@magnaflux.com
	Revision Date	22.08.2018
	Version	17.2