



SAFETY DATA SHEET
DW5 ALUMINIUM SAFE DISHWASHER DETERGENT
According to Regulation (EC) No 1907/2006, Annex II, as amended.

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

1.1. Product identifier

Product name DW5 ALUMINIUM SAFE DISHWASHER DETERGENT
Internal identification C847

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

Identified uses Cleaning agent.
Uses advised against Use only for intended applications.

1.3. Details of the supplier of the safety data sheet

Supplier ARROW SOLUTIONS
RAWDON ROAD
MOIRA
SWADLINCOTE
DERBYSHIRE
DE12 6DA
TEL: +44 (0)1283 221044
FAX: +44 (0)1283 225731
sales@arrowchem.com

1.4. Emergency telephone number

Emergency telephone +44 (0) 777 8505 330 (24 hrs).

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Met. Corr. 1 - H290
Health hazards Skin Corr. 1B - H314 Eye Dam. 1 - H318
Environmental hazards Not Classified

2.2. Label elements

Pictogram



Signal word Danger

Hazard statements H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.

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Precautionary statements

P280 Wear protective clothing, gloves, eye and face protection.
 P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing.
 Rinse skin with water or shower.
 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 CENTER/ doctor.
 P501 Dispose of contents/ container in accordance with national regulations.

Contains

DISODIUM METASILICATE

Detergent labelling

5 - < 15% phosphonates, < 5% amphoteric surfactants, < 5% EDTA and salts thereof

2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Tetrasodium (1-hydroxyethylidene)bisphosphonic acid			10-30%
CAS number: 3794-83-0	EC number: 223-267-7	REACH registration number: 01-2119510385-52-XXXX	
Classification Acute Tox. 4 - H302 Eye Irrit. 2 - H319			

DISODIUM METASILICATE			5-10%
CAS number: 6834-92-0	EC number: 229-912-9	REACH registration number: 01-2119449811-37-XXXX	
Classification Met. Corr. 1 - H290 Skin Corr. 1B - H314 Eye Dam. 1 - H318 STOT SE 3 - H335			

SODIUM SILICATE			1-5%
CAS number: 1344-09-8	EC number: 215-687-4	REACH registration number: 01-2119448725-31-XXXX	
Classification Met. Corr. 1 - H290 Skin Irrit. 2 - H315 Eye Dam. 1 - H318 STOT SE 3 - H335			

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tetrasodium N,N-bis(carboxylatomethyl)-L-glutamate			1-5%
CAS number: 51981-21-6	EC number: 257-573-7	REACH registration number: 01-2119493601-38-XXXX	
Classification Not Classified			

TETRASODIUM ETHYLENE DIAMINE TETRAACETATE			1-5%
CAS number: 64-02-8	EC number: 200-573-9	REACH registration number: 01-2119486762-27-XXXX	
Classification Acute Tox. 4 - H302 Acute Tox. 4 - H332 Eye Dam. 1 - H318 STOT RE 2 - H373			

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

SECTION 4: First aid measures

4.1. Description of first aid measures

General information	Show this Safety Data Sheet to the medical personnel. Chemical burns must be treated by a physician. Get medical attention immediately. If medical advice is needed, have product container or label at hand.
Inhalation	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing.
Ingestion	Rinse mouth thoroughly with water. Do not induce vomiting. Get medical attention immediately.
Skin contact	Wash skin thoroughly with soap and water. Get medical attention immediately.
Eye contact	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse. Get medical attention immediately.

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

General information	Chemical burns must be treated by a physician.
Inhalation	Coughing, chest tightness, feeling of chest pressure.
Ingestion	May cause chemical burns in mouth and throat.
Skin contact	Burning pain and severe corrosive skin damage.
Eye contact	Causes serious eye damage. Severe irritation, burning and tearing.

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

Notes for the doctor	Treat symptomatically.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Use fire-extinguishing media suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture

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Hazardous combustion products

Thermal decomposition or combustion products may include the following substances: Ammonia or amines. Carbon monoxide (CO). Carbon dioxide (CO₂). Nitrous gases (NO_x). Phosphorus.

5.3. Advice for firefighters

Protective actions during firefighting

No specific firefighting precautions known.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions

Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate. Do not touch or walk into spilled material. Avoid contact with skin, eyes and clothing. Provide adequate ventilation. Avoid contact with contaminated tools and objects. Do not handle broken packages without protective equipment. Wash thoroughly after dealing with a spillage.

6.2. Environmental precautions

Environmental precautions

Do not discharge into drains or watercourses or onto the ground.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up

Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate. Absorb spillage to prevent material damage. Absorb spillage with inert, damp, non-combustible material. Collect and place in suitable waste disposal containers and seal securely. Containers with collected spillage must be properly labelled with correct contents and hazard symbol. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage.

6.4. Reference to other sections

Reference to other sections

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

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions

Wear protective clothing, gloves, eye and face protection. Avoid contact with skin, eyes and clothing. May be corrosive to metals. Avoid spilling. Avoid contact with contaminated tools and objects. Do not mix with acid. Do not reuse empty containers. Do not use in paint spraying equipment. Do not empty into drains. Do not eat, drink or smoke when using this product. Do not handle broken packages without protective equipment. Product residues retained in emptied containers can be hazardous. Remove contaminated clothing and protective equipment before entering eating areas. Wash hands thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions

Store at temperatures between 4°C and 40°C. Store in tightly-closed, original container. Store away from the following materials: Acids.

Storage class

Corrosive storage.

7.3. Specific end use(s)

Specific end use(s)

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

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Tetrasodium (1-hydroxyethylidene)bisphosphonic acid (CAS: 3794-83-0)

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DNEL	<p>Workers - Inhalation; Long term systemic effects: 16.9 mg/m³</p> <p>Workers - Inhalation; Long term local effects: 10 mg/m³</p> <p>Workers - Dermal; Long term systemic effects: 48 mg/kg/day</p> <p>Consumer - Inhalation; Long term systemic effects: 4.2 mg/m³</p> <p>Consumer - Inhalation; Long term local effects: 10 mg/m³</p> <p>Consumer - Dermal; Long term systemic effects: 24 mg/kg/day</p> <p>Consumer - Oral; Long term systemic effects: 2.4 mg/kg/day</p>
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PNEC	<p>- Fresh water; 0.096 mg/l</p> <p>- Marine water; 0.00963 mg/l</p> <p>- STP; 58 mg/l</p> <p>- Sediment (Freshwater); 193 mg/kg</p> <p>- Sediment (Marinewater); 19.3 mg/kg</p> <p>- Soil; 14 mg/kg</p>
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DISODIUM METASILICATE (CAS: 6834-92-0)

DNEL	<p>Industry - Dermal; Long term : 1.49 mg/kg/day</p> <p>Industry - Inhalation; Long term : 6.22 mg/m³</p> <p>Consumer - Dermal; Long term : 0.74 mg/kg/day</p> <p>Consumer - Inhalation; Long term : 1.55 mg/m³</p> <p>Consumer - Oral; Long term : 0.74</p>
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tetrasodium N,N-bis(carboxylatomethyl)-L-glutamate (CAS: 51981-21-6)

DNEL	<p>Workers - Inhalation; Long term systemic effects: 7.3 mg/m³</p> <p>Workers - Dermal; Long term systemic effects: 15,000 mg/kg/day</p> <p>General population - Inhalation; Long term systemic effects: 1.8 mg/m³</p> <p>General population - Dermal; Long term systemic effects: 7,500 mg/kg/day</p> <p>General population - Oral; Long term systemic effects: 1.5 mg/kg/day</p>
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TETRASODIUM ETHYLENE DIAMINE TETRAACETATE (CAS: 64-02-8)

DNEL	<p>Workers - Inhalation; Long term systemic effects, local effects: 1.5 mg/m³</p> <p>Workers - Inhalation; Short term systemic effects, local effects: 3 mg/m³</p> <p>Consumer - Inhalation; Long term local effects, systemic effects: 0.6 mg/m³</p> <p>Consumer - Inhalation; Short term local effects, systemic effects: 1.2 mg/m³</p> <p>Consumer - Oral; Long term systemic effects, local effects: 25 mg/m³</p>
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PNEC	<p>- Fresh water; 2.2 mg/l</p> <p>- Marine water; 0.22 mg/l</p> <p>- Intermittent release; 1.2 mg/l</p> <p>- STP; 43 mg/l</p> <p>- Soil; 0.72 mg/kg</p>
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8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate ventilation.

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Eye/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with European Standard EN166. The following protection should be worn: Chemical splash goggles or face shield.

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. It is recommended that chemical-resistant, impervious gloves are worn. To protect hands from chemicals, gloves should comply with European Standard EN374. The most suitable glove should be chosen in consultation with the glove supplier/manufacture, who can provide information about the breakthrough time of the glove material. The selected gloves should have a breakthrough time of at least 4 hours. The breakthrough time for any glove material may be different for different glove manufacturers. When used with mixtures, the protection time of gloves cannot be accurately estimated. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Protective gloves should have a minimum thickness of 0.15 mm. Glove thickness is not necessarily a good measure of glove resistance as the permeation rate will depend on the exact glove composition. The choice of protective gloves depends upon the chemicals being handled, and the conditions of work and use. Repeated exposure to chemicals will degrade the ability of the glove to provide resistance to chemicals. Specific work environments and material handling practices may vary, therefore safety procedures should be developed for each intended application. Gloves made from the following material may provide suitable chemical protection: Nitrile rubber. Neoprene. Rubber (natural, latex).

Other skin and body protection

Provide eyewash station.

Hygiene measures

Wash promptly if skin becomes contaminated. Wash contaminated clothing before reuse.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Straw.
Odour	Characteristic.
pH	pH (concentrated solution): >13.0
Relative density	1.21 @ 25°C
Solubility(ies)	Completely soluble in water.

9.2. Other information

Other information	Not determined.
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SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	Reactions with the following materials may generate heat: Acids.
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10.2. Chemical stability

Stability	Stable at normal ambient temperatures and when used as recommended.
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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Not determined.
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10.4. Conditions to avoid

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Conditions to avoid Reactions with the following materials may generate heat: Strong acids.

10.5. Incompatible materials

Materials to avoid Acids.

10.6. Hazardous decomposition products

Hazardous decomposition products Thermal decomposition or combustion products may include the following substances:
Ammonia or amines. Carbon monoxide (CO). Carbon dioxide (CO₂). Nitrous gases (NO_x).
Phosphorus.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

ATE oral (mg/kg) 7,333.12

Acute toxicity - inhalation

ATE inhalation (gases ppm) 953,389.83

ATE inhalation (vapours mg/l) 2,330.51

ATE inhalation (dusts/mists mg/l) 317.8

Skin corrosion/irritation

Extreme pH ≥ 11.5 Corrosive to skin.

Serious eye damage/irritation

Serious eye damage/irritation Corrosive to skin. Corrosivity to eyes is assumed. No testing is needed.

Inhalation Coughing, chest tightness, feeling of chest pressure.

Ingestion May cause burns in mucous membranes, throat, oesophagus and stomach.

Skin contact Causes severe burns.

Eye contact Causes serious eye damage. Severe irritation, burning and tearing.

Toxicological information on ingredients.

Tetrasodium (1-hydroxyethylidene)bisphosphonic acid

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 940.0

Species Rat

ATE oral (mg/kg) 940.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 5,000.0

Species Rabbit

ATE dermal (mg/kg) 5,000.0

DISODIUM METASILICATE

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Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ 5,000.0
mg/kg)

Species Rat

ATE dermal (mg/kg) 5,000.0

tetrasodium N,N-bis(carboxylatomethyl)-L-glutamate

Acute toxicity - oral

Acute toxicity oral (LD₅₀ 2,001.0
mg/kg)

Species Rat

ATE oral (mg/kg) 2,001.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ 2,000.1
mg/kg)

Species Rat

ATE dermal (mg/kg) 2,000.1

TETRASODIUM ETHYLENE DIAMINE TETRAACETATE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ 1,780.0
mg/kg)

Species Rat

ATE oral (mg/kg) 1,780.0

Acute toxicity - inhalation

Notes (inhalation LC₅₀)

ATE inhalation (gases 11,250.0
ppm)

ATE inhalation (vapours 27.5
mg/l)

ATE inhalation 3.75
(dusts/mists mg/l)

SECTION 12: Ecological Information

Ecotoxicity Not regarded as dangerous for the environment.

12.1. Toxicity

Acute aquatic toxicity

Acute toxicity - fish Not determined.

Ecological information on ingredients.

Tetrasodium (1-hydroxyethylidene)bisphosphonic acid

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Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: 278 mg/l, Oncorhynchus mykiss (Rainbow trout)

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 754 mg/l, Daphnia magna

Chronic aquatic toxicity

Chronic toxicity - aquatic invertebrates NOEC, 28 days: 9.63 mg/l, Daphnia magna

DISODIUM METASILICATE

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: 180 mg/l, Brachydanio rerio (Zebra Fish)

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 1700 mg/l, Daphnia magna

Acute toxicity - aquatic plants EC₅₀, 72 hours: 207 mg/l, Scenedesmus subspicatus

tetrasodium N,N-bis(carboxylatomethyl)-L-glutamate

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: > 100 mg/l, Oncorhynchus mykiss (Rainbow trout)

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: > 100 mg/l, Daphnia magna

TETRASODIUM ETHYLENE DIAMINE TETRAACETATE

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: > 100 mg/l, Lepomis macrochirus (Bluegill)

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: >100 mg/l, Daphnia magna

12.2. Persistence and degradability

Persistence and degradability The product is expected to be biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential The product does not contain any substances expected to be bioaccumulating.

12.4. Mobility in soil

Mobility The product is soluble in water.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

12.6. Other adverse effects

Other adverse effects Not determined.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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Disposal methods Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements.

SECTION 14: Transport information

General For limited quantity packaging/limited load information, consult the relevant modal documentation using the data shown in this section.

Special Provisions note

14.1. UN number

UN No. (ADR/RID)	1760
UN No. (IMDG)	1760
UN No. (ICAO)	1760

14.2. UN proper shipping name

Proper shipping name (ADR/RID) CORROSIVE LIQUID, N.O.S.(sodium metasilicate)

Proper shipping name (IMDG) CORROSIVE LIQUID, N.O.S.(sodium metasilicate)

Proper shipping name (ICAO) CORROSIVE LIQUID, N.O.S.(sodium metasilicate)

14.3. Transport hazard class(es)

ADR/RID class	8
ADR/RID classification code	C9
ADR/RID label	8
IMDG class	8
ICAO class/division	8

Transport labels



14.4. Packing group

ADR/RID packing group	II
IMDG packing group	II
ICAO packing group	II

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

EmS	F-A, S-B
ADR transport category	2
Emergency Action Code	2X

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Hazard Identification Number 80
(ADR/RID)

Tunnel restriction code (E)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Not applicable.

**Annex II of MARPOL 73/78
and the IBC Code**

SECTION 15: Regulatory information

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

National regulations Control of Substances Hazardous to Health Regulations 2002 (as amended).

EU legislation Regulation (EC) No 648/2004 of the European Parliament and of the Council of 31 March 2004 on detergents (as amended).
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 (as amended).
Commission Regulation (EU) No 453/2010 of 20 May 2010.
Commission Regulation (EU) No 2015/830 of 28 May 2015.

Guidance Workplace Exposure Limits EH40.

15.2. Chemical safety assessment

SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet ATE: Acute Toxicity Estimate.
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
CAS: Chemical Abstracts Service.
DNEL: Derived No Effect Level.
EC₅₀: 50% of maximal Effective Concentration.
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 (Median Lethal Dose).
NOEC: No Observed Effect Concentration.
PBT: Persistent, Bioaccumulative and Toxic substance.
PNEC: Predicted No Effect Concentration.
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.
UN: United Nations.
vPvB: Very Persistent and Very Bioaccumulative.

Classification abbreviations and acronyms Acute Tox. = Acute toxicity
Eye Dam. = Serious eye damage
Eye Irrit. = Eye irritation
Met. Corr. = Corrosive to metals
Skin Corr. = Skin corrosion
Skin Irrit. = Skin irritation
STOT RE = Specific target organ toxicity-repeated exposure
STOT SE = Specific target organ toxicity-single exposure

Revision comments NOTE: Lines within the margin indicate significant changes from the previous revision.

Revision date 10/01/2019

DW5 ALUMINIUM SAFE DISHWASHER DETERGENT

Revision	5.0
Supersedes date	16/02/2017
SDS number	26639
Hazard statements in full	H290 May be corrosive to metals. H302 Harmful if swallowed. H314 Causes severe skin burns and eye damage. H315 Causes skin irritation. H318 Causes serious eye damage. H319 Causes serious eye irritation. H332 Harmful if inhaled. H335 May cause respiratory irritation. H373 May cause damage to organs (Respiratory system, lungs) through prolonged or repeated exposure.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials 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, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.