



SAFETY DATA SHEET

DW1 HARD WATER DISHWASHER DETERGENT

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

1.1. Product identifier

Product name DW1 HARD WATER DISHWASHER DETERGENT

Internal identification C862

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). +44 (0) 1865 407333 (24 hrs). MEDICAL AND ENVIRONMENTAL EMERGENCIES ONLY.

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. 1A - 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

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.
P280 Wear protective clothing, gloves, eye and face protection.

Contains SODIUM HYDROXIDE

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-1,1-DIPHOSPHONATE			10-30%
CAS number: 3794-83-0		EC number: 223-267-7	
Classification Skin Irrit. 2 - H315 Eye Irrit. 2 - H319			
SODIUM HYDROXIDE			5-10%
CAS number: 1310-73-2		EC number: 215-185-5	REACH registration number: 01-2119457892-27
Classification Met. Corr. 1 - H290 Skin Corr. 1A - H314 Eye Dam. 1 - H318			
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			

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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	Chemical burns must be treated by a physician. Show this Safety Data Sheet to the medical personnel.
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.
Skin contact	Wash skin thoroughly with soap and water. Get medical attention promptly if symptoms occur after washing.
Eye contact	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. 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	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.
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5.2. Special hazards arising from the substance or mixture

Hazardous combustion products	Thermal decomposition or combustion products may include the following substances: Ammonia or amines. Carbon monoxide (CO). Carbon dioxide (CO ₂). Nitrous gases (NO _x). Phosphorus.
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5.3. Advice for firefighters

Protective actions during firefighting	No specific firefighting precautions known.
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SECTION 6: Accidental release measures

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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. Take care as floors and other surfaces may become slippery. 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. Do not touch or walk into spilled material. 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 spilling. Avoid contact with skin, eyes and clothing. Do not reuse empty containers. Do not eat, drink or smoke when using this product. Do not empty into drains. 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.

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

Occupational exposure limits

SODIUM HYDROXIDE

Short-term exposure limit (15-minute): WEL 2 mg/m³

WEL = Workplace Exposure Limit

TETRASODIUM 1-HYDROXYETHYLIDENE-1,1-DIPHOSPHONATE (CAS: 3794-83-0)

DNEL

Workers - Inhalation; Long term systemic effects: 16.9 mg/m³
 Workers - Inhalation; Long term local effects: 10 mg/m³
 Workers - Dermal; Long term systemic effects: 48 mg/kg/day
 General population - Inhalation; Long term systemic effects: 4.2 mg/m³
 General population - Inhalation; Long term local effects: 10 mg/m³
 General population - Inhalation; Short term local effects: 10 mg/m³
 General population - Dermal; Long term systemic effects: 24 mg/kg/day
 General population - Oral; Long term systemic effects: 2.1 mg/kg/day

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PNEC

- Fresh water; 0.096 mg/l
- Marine water; 0.01 mg/l
- STP; 58 mg/l
- Sediment (Freshwater); 42 mg/kg
- Sediment (Marinewater); 4.2 mg/kg
- Soil; 14 mg/kg

SODIUM HYDROXIDE (CAS: 1310-73-2)

DNEL

- Industry - Inhalation; Short term local effects: 1 mg/m³
- Industry - Inhalation; Long term local effects: 1 mg/m³
- Consumer - Inhalation; Short term local effects: 1 mg/m³

tetrasodium N,N-bis(carboxylatomethyl)-L-glutamate (CAS: 51981-21-6)

DNEL

- Workers - Inhalation; Long term systemic effects: 7.3 mg/m³
- Workers - Dermal; Long term systemic effects: 15,000 mg/kg/day
- General population - Inhalation; Long term systemic effects: 1.8 mg/m³
- General population - Dermal; Long term systemic effects: 7,500 mg/kg/day
- General population - Oral; Long term systemic effects: 1.5 mg/kg/day

TETRASODIUM ETHYLENE DIAMINE TETRAACETATE (CAS: 64-02-8)

DNEL

- Workers - Inhalation; Long term systemic effects, local effects: 1.5 mg/m³
- Workers - Inhalation; Short term systemic effects, local effects: 3 mg/m³
- Consumer - Inhalation; Long term local effects, systemic effects: 0.6 mg/m³
- Consumer - Inhalation; Short term local effects, systemic effects: 1.2 mg/m³
- Consumer - Oral; Long term systemic effects, local effects: 25 mg/m³

PNEC

- Fresh water; 2.2 mg/l
- Marine water; 0.22 mg/l
- Intermittent release; 1.2 mg/l
- STP; 43 mg/l
- Soil; 0.72 mg/kg

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate ventilation.

Eye/face protection

Wear chemical splash goggles. Personal protective equipment for eye and face protection should comply with European Standard EN166.

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Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with European Standard EN374. 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. Gloves made from the following material may provide suitable chemical protection: Neoprene. Nitrile rubber. Rubber (natural, latex). 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.

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	Clear liquid.
Colour	Straw.
Odour	Mild.
pH	pH (concentrated solution): >13.0
Relative density	1.17 @ 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

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

Materials to avoid	Strong acids.
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10.6. Hazardous decomposition products

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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) 148,333.33

Acute toxicity - inhalation

ATE inhalation (gases ppm) 937,500.0

ATE inhalation (vapours mg/l) 2,291.67

ATE inhalation (dusts/mists mg/l) 312.5

Inhalation Coughing, chest tightness, feeling of chest pressure.

Ingestion Causes severe burns.

Skin contact Causes severe burns.

Eye contact Severe irritation, burning and tearing.

Toxicological information on ingredients.

TETRASODIUM 1-HYDROXYETHYLIDENE-1,1-DIPHOSPHONATE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 2,850.0

Species Rat

ATE oral (mg/kg) 2,850.0

Acute toxicity - dermal

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

Species Rabbit

ATE dermal (mg/kg) 5,000.0

SODIUM HYDROXIDE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 2,000.0

Species Rat

ATE oral (mg/kg)

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

Acute toxicity - oral

DW1 HARD WATER DISHWASHER DETERGENT

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

Species Rat

ATE oral (mg/kg) 2,001.0

Acute toxicity - dermal

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

Species Rat

ATE dermal (mg/kg) 2,000.1

TETRASODIUM ETHYLENE DIAMINE TETRAACETATE

Acute toxicity - oral

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

Species Rat

ATE oral (mg/kg) 1,780.0

Acute toxicity - inhalation

Notes (inhalation LC₅₀)

ATE inhalation (gases ppm) 11,250.0

ATE inhalation (vapours mg/l) 27.5

ATE inhalation (dusts/mists mg/l) 3.75

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.

SODIUM HYDROXIDE

Acute aquatic toxicity

Acute toxicity - fish LC50, 48 hours: ~ 145 mg/l, Poecilia reticulata (Guppy)
REACH dossier information.

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: ~ 76 mg/l, Daphnia magna
REACH dossier information.

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

Acute aquatic toxicity

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

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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

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

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 hydroxide)

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

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

14.3. Transport hazard class(es)

ADR/RID class 8

IMDG class 8

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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

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

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**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.
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 (Median Lethal Dose).
PBT: Persistent, Bioaccumulative and Toxic substance.
PNEC: Predicted No Effect Concentration.
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.
vPvB: Very Persistent and Very Bioaccumulative.
EC₅₀: 50% of maximal Effective Concentration.
DMEL: Derived Minimal Effect Level.
UN: United Nations.

Revision comments

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

Revision date

27/09/2018

Revision

2.1

Supersedes date

07/02/2017

SDS number

26638

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.
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.