

Dual Clean

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 12/23/2016

Revision date: 06/27/2017

Supersedes: 12/23/2016

Version: 1.1

SDS No: 11073-0009

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : Dual Clean

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Cleaning agent
Restricted to professional users
Recommended use : Cleaning agent, Restricted to professional users
Restrictions on use : The product should not be used for purposes other than those shown above without first referring to the supplier and obtaining written handling instructions

1.3. Supplier

i-clean Technologies GmbH
Mallastr. 69
Mannheim, D-68219 - Germany
T +49 (0) 621 92109040 - F +49 (0) 621 92109041
info@i-clean-technologies.com - www.i-clean-technologies.com

1.4. Emergency telephone number

Emergency number : Emergency CONTACT (24-Hour-Number)
GBK/Infotrac ID 101074a : (USA domestic) 1 800 535 5053

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin corrosion/irritation Category 1A Causes severe skin burns and eye damage

2.2. GHS Label elements, including precautionary statements

GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) : Danger
Hazard statements (GHS-US) : Causes severe skin burns and eye damage
Precautionary statements (GHS-US) : Do not breathe dust
Wash hands thoroughly after handling
Wear protective gloves, protective clothing, eye protection
If swallowed: rinse mouth. Do NOT induce vomiting
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
If inhaled: Remove person to fresh air and keep comfortable for breathing
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER, a doctor
Wash contaminated clothing before reuse
Store locked up
Dispose of contents/container to in accordance with local and national regulations

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

Dual Clean

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
SDS No: 11073-0009

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Comments : Mixture of the substances listed below with harmless additives

Name	Product identifier	%	GHS-US classification
citric acid	(CAS-No.) 77-92-9	20 - 25	Skin Irrit. 2, H315 Eye Dam. 1, H318
sodium hydroxide, caustic soda	(CAS-No.) 1310-73-2	20 - 25	Met. Corr. 1, H290 Skin Corr. 1A, H314
Silicic acid, disodium salt, pentahydrate	(CAS-No.) 10213-79-3	15 - 20	Met. Corr. 1, H290 Skin Corr. 1B, H314 STOT SE 3, H335
sodium carbonate	(CAS-No.) 497-19-8	15 - 20	Eye Irrit. 2A, H319
Alcohols, C16-18, ethoxylated	(CAS-No.) 68439-49-6	1 - 5	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2A, H319
Alcohols, C16-18 and C18, unsaturated, ethoxylated	(CAS-No.) 68920-66-1	< 5	Eye Irrit. 2A, H319

*Chemical name, CAS number and/or exact concentration have been withheld as a trade secret

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general	: If you feel unwell, seek medical advice. Remove and wash contaminated clothing before re-use.
First-aid measures after inhalation	: Ensure of fresh air. Make the affected person rest and keep at warm. In the event of persistent symptoms receive medical treatment.
First-aid measures after skin contact	: Wash off immediately with soap and plenty of water. Get medical advice if skin irritation persists.
First-aid measures after eye contact	: Rinse immediately with plenty of water, also under the eyelids. Remove contact lenses, if present and easy to do. Continue rinsing. Consult an eye specialist immediately.
First-aid measures after ingestion	: Rinse mouth. Drink plenty of water. Do not give an unconscious person anything to drink. Call a physician immediately. Do not induce vomiting.

4.2. Most important symptoms and effects (acute and delayed)

Potential Adverse human health effects and symptoms	: If appropriately handled and if in accordance with the general hygienic rules, no damages to health have become known.
Symptoms/effects after skin contact	: Causes skin irritation. Burns.
Symptoms/effects after eye contact	: Causes serious eye damage. Serious damage to eyes.
Symptoms/effects after ingestion	: Burns.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Foam. Carbon dioxide. Dry powder. Water spray. Product itself does not burn. Fire-extinguishing activities according to surrounding.
Unsuitable extinguishing media	: Strong water jet.

5.2. Specific hazards arising from the chemical

Reactivity	: No decomposition if stored and applied as directed.
------------	---

5.3. Special protective equipment and precautions for fire-fighters

Precautionary measures fire	: No special protective measures against fire required.
Firefighting instructions	: Cool containers at risk with water spray jet.
Protection during firefighting	: Complete protective clothing. Self-contained breathing apparatus. Do not attempt to take action without suitable protective equipment.
Other information	: Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

Dual Clean

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
SDS No: 11073-0009

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Use personal protective clothing. Ensure adequate air ventilation. Respirator must be worn if exposed to dust. Avoid contact with eyes, skin or mucous membrane.

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Avoid contact with skin and eyes. Do not breathe dust.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Do not allow to enter drains or water courses. Do not discharge into the subsoil/soil. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Mechanically recover the product. Take up mechanically (sweeping, shoveling) and collect in suitable container for disposal. Minimize generation of dust.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

Observe protective instructions (see Sections 7 and 8). Information for disposal see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid contact with eyes, skin or mucous membrane. Keep container tightly closed. Store in original container.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Avoid contact with skin, eyes and clothing. Wash contaminated clothing before reuse. Wash hands before breaks and at the end of workday. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed in a dry, cool and well-ventilated place. Keep only in original container.

Incompatible products : Acids and oxidizing agents. Bases.

Incompatible materials : Acids.

Information on mixed storage : Keep away from food, drink and animal feeding stuffs.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

citric acid (77-92-9)		
Not applicable		
Alcohols, C16-18, ethoxylated (68439-49-6)		
Not applicable		
Alcohols, C16-18 and C18, unsaturated, ethoxylated (68920-66-1)		
Not applicable		
sodium hydroxide, caustic soda (1310-73-2)		
ACGIH	Local name	Sodium hydroxide
ACGIH	ACGIH Ceiling (mg/m ³)	2 mg/m ³
ACGIH	Remark (ACGIH)	URT, eye, & skin irr
OSHA	OSHA PEL (TWA) (mg/m ³)	2 mg/m ³
Silicic acid, disodium salt, pentahydrate (10213-79-3)		
Not applicable		
sodium carbonate (497-19-8)		
Not applicable		

Dual Clean

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
SDS No: 11073-0009

Additional information : Obey TLV for common dust, if applicable

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure adequate ventilation, especially in confined areas.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Chemically resistant protective gloves. EN 374. Requirements can vary as a function of the use. Therefore it is necessary to adhere additionally to the recommendations given by the manufacturer of protective gloves. Select the appropriate glove material adhering to the breakthrough time, permeation rate and the degradation.

Eye protection:

Safety goggles with side protection (EN 166). Eye wash bottle with pure water (EN 15154). Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

Not required for normal conditions of use.
breathing apparatus needed only when dust is formed. Respiratory protective device with a particle filter

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Powder.
Color	: white
Odor	: characteristic
Odor threshold	: No data available
pH	: ≈ 13
pH solution	: 1 %
Melting point	: Not determined
Freezing point	: Not applicable
Boiling point	: Not determined
Flash point	: Not applicable
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapor pressure	: Not applicable
Relative vapor density at 20 °C	: Not applicable
Relative density	: No data available
Specific gravity / density	: Not determined
Solubility	: Soluble in water.
Log Pow	: Not determined
Auto-ignition temperature	: Not applicable
Decomposition temperature	: Not applicable
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: Not applicable
Explosion limits	: Not applicable LEL: Not applicable UEL: Not applicable
Explosive properties	: Product is not explosive.
Oxidizing properties	: No data available

Dual Clean

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
SDS No: 11073-0009

9.2. Other information

VOC content : 0 %

SECTION 10: Stability and reactivity

10.1. Reactivity

No decomposition if stored and applied as directed.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Reactions with acids. Reaction with metals causes release of hydrogen.

10.4. Conditions to avoid

To avoid thermal decomposition, do not overheat.

10.5. Incompatible materials

metals. Acids.

10.6. Hazardous decomposition products

Fire may produce: Carbon monoxide. Carbon dioxide. Sulphur oxides. Nitrous fumes.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

citric acid (77-92-9)	
LD50 oral rat	11700 mg/kg (OECD 401 method)
LD50 dermal rat	> 2000 mg/kg
ATE US (oral)	11700 mg/kg body weight
Alcohols, C16-18, ethoxylated (68439-49-6)	
ATE US (oral)	500 mg/kg body weight
sodium carbonate (497-19-8)	
LD50 oral rat	4090 mg/kg
LC50 inhalation rat (mg/l)	2300 mg/m ³ (Exposure time: 2 h)
ATE US (oral)	4090 mg/kg body weight
ATE US (dust, mist)	1.2 mg/l/4h

Skin corrosion/irritation : Causes severe skin burns and eye damage.
pH: ≈ 13

Serious eye damage/irritation : Not classified
pH: ≈ 13

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity – single exposure : Not classified

Specific target organ toxicity – repeated exposure : Not classified

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : If appropriately handled and if in accordance with the general hygienic rules, no damages to health have become known.

Symptoms/effects after skin contact : Causes skin irritation. Burns.

Dual Clean

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
SDS No: 11073-0009

Symptoms/effects after eye contact	: Causes serious eye damage. Serious damage to eyes.
Symptoms/effects after ingestion	: Burns.
Other information	: The product has not been tested. The information is derived from the properties of the individual components.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Before neutralisation, the product may represent a danger to aquatic organisms.

citric acid (77-92-9)

LC50 fish 1	440 mg/l
-------------	----------

sodium hydroxide, caustic soda (1310-73-2)

EC50 Daphnia 1	40 mg/l
----------------	---------

sodium carbonate (497-19-8)

LC50 fish 1	300 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus)
-------------	---

EC50 Daphnia 1	250 mg/l
----------------	----------

LC50 fish 2	310 - 1220 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
-------------	---

12.2. Persistence and degradability

Dual Clean

Persistence and degradability	The surfactant(s) contained in this preparation complies(comply) 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.
-------------------------------	---

12.3. Bioaccumulative potential

Dual Clean

Log Pow	Not determined
---------	----------------

citric acid (77-92-9)

Log Pow	-1.72
---------	-------

Bioaccumulative potential	Low bio-accumulation can be estimated because of low log Po/w.
---------------------------	--

sodium carbonate (497-19-8)

BCF fish 1	No bioaccumulation
------------	--------------------

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other adverse effects : hazardous to water. May cause pH changes in aqueous ecological systems.

Effect on global warming : No known effects from this product.

GWPmix comment : No known effects from this product.

Other information : Do not release undiluted or in higher quantities into the groundwater, sewerage or waters. Neutralization is necessary before draining of to the purification plant.

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

Dual Clean

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
SDS No: 11073-0009

- Product/Packaging disposal recommendations : Can be incinerated according to local regulations. Empty containers should be taken for local recycling, recovery or waste disposal. Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse. Packaging that cannot be cleaned should be disposed of like the product.
- Additional information : Hazardous waste.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

- Transport document description : UN1823 Sodium hydroxide, solid (MIXTURE), 8, II
- UN-No.(DOT) : UN1823
- Proper Shipping Name (DOT) : Sodium hydroxide, solid
MIXTURE
- Class (DOT) : 8 - Class 8 - Corrosive material 49 CFR 173.136
- Packing group (DOT) : II - Medium Danger
- Hazard labels (DOT) : 8 - Corrosive



- DOT Packaging Non Bulk (49 CFR 173.xxx) : 212
- DOT Packaging Bulk (49 CFR 173.xxx) : 240
- DOT Special Provisions (49 CFR 172.102) : IB8 - Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Fiberboard (11G); Wooden (11C, 11D and 11F); Flexible (13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2).
IP2 - When IBCs other than metal or rigid plastics IBCs are used, they must be offered for transportation in a closed freight container or a closed transport vehicle.
IP4 - Flexible, fiberboard or wooden IBCs must be sift-proof and water-resistant or be fitted with a sift-proof and water-resistant liner.
T3 - 2.65 178.274(d)(2) Normal..... 178.275(d)(2)
TP33 - The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which are filled and discharged at temperatures above their melting point which are cooled and transported as a solid mass. Solid substances transported or offered for transport above their melting point are authorized for transportation in portable tanks conforming to the provisions of portable tank instruction T4 for solid substances of packing group III or T7 for solid substances of packing group II, unless a tank with more stringent requirements for minimum shell thickness, maximum allowable working pressure, pressure-relief devices or bottom outlets are assigned in which case the more stringent tank instruction and special provisions shall apply. Filling limits must be in accordance with portable tank special provision TP3. Solids meeting the definition of an elevated temperature material must be transported in accordance with the applicable requirements of this subchapter.
- DOT Packaging Exceptions (49 CFR 173.xxx) : 154
- DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 15 kg
- DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 50 kg
- DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.
- DOT Vessel Stowage Other : 52 - Stow "separated from" acids
- Emergency Response Guide (ERG) Number : 154
- Other information : No supplementary information available.

Transportation of Dangerous Goods

- Transport document description : UN1823 SODIUM HYDROXIDE, SOLID (MIXTURE), 8, II
- UN-No. (TDG) : UN1823
- Proper Shipping Name (Transportation of Dangerous Goods) : SODIUM HYDROXIDE, SOLID

Dual Clean

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
SDS No: 11073-0009

TDG Primary Hazard Classes	: 8 - Class 8 - Corrosives
Packing group	: II - Medium Danger
Explosive Limit and Limited Quantity Index	: 1 kg
Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index	: 15 kg

Transport by sea

Transport document description (IMDG)	: UN 1823 SODIUM HYDROXIDE, SOLID (MIXTURE), 8, II
UN-No. (IMDG)	: 1823
Proper Shipping Name (IMDG)	: SODIUM HYDROXIDE, SOLID
Class (IMDG)	: 8 - Corrosive substances
Packing group (IMDG)	: II - substances presenting medium danger
Limited quantities (IMDG)	: 1 kg
MFAG-No	154

Air transport

Transport document description (IATA)	: UN 1823 Sodium hydroxide, solid (MIXTURE), 8, II
UN-No. (IATA)	: 1823
Proper Shipping Name (IATA)	: Sodium hydroxide, solid
Class (IATA)	: 8 - Corrosives
Packing group (IATA)	: II - Medium Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory except for:

Silicic acid, disodium salt, pentahydrate	CAS-No. 10213-79-3	15 - 20%
---	--------------------	----------

Alcohols, C16-18, ethoxylated (68439-49-6)

EPA TSCA Regulatory Flag	XU - XU - indicates a substance exempt from reporting under the Inventory Update Reporting Rule, i.e, Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(C)).
--------------------------	---

Alcohols, C16-18 and C18, unsaturated, ethoxylated (68920-66-1)

EPA TSCA Regulatory Flag	XU - XU - indicates a substance exempt from reporting under the Inventory Update Reporting Rule, i.e, Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(C)).
--------------------------	---

sodium hydroxide, caustic soda (1310-73-2)

CERCLA RQ	1000 lb
-----------	---------

15.2. International regulations

CANADA

citric acid (77-92-9)

Listed on the Canadian DSL (Domestic Substances List)

Alcohols, C16-18, ethoxylated (68439-49-6)

Listed on the Canadian DSL (Domestic Substances List)

Alcohols, C16-18 and C18, unsaturated, ethoxylated (68920-66-1)

Listed on the Canadian DSL (Domestic Substances List)

sodium hydroxide, caustic soda (1310-73-2)

Listed on the Canadian DSL (Domestic Substances List)

Dual Clean

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
SDS No: 11073-0009

Silicic acid, disodium salt, pentahydrate (10213-79-3)

Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

sodium carbonate (497-19-8)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

sodium hydroxide, caustic soda (1310-73-2)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Revision date : 06/27/2017

Full text of H-phrases:

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
H335	May cause respiratory irritation

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product