

DUAL DIP

Revision: 2024-10-22

Version: 01.0

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

1.1 Product identifier

Trade name: DUAL DIP

1.2 Recommended use and restrictions on use

See product label.
For professional and industrial use only.

1.3 Details of the supplier of the safety data sheet

SOLENIS VIETNAM COMPANY LIMITED

Contact details

Level 4&5, M-Building, Lot C7B-02A, Block A, No.9 Street 8, Zone Saigon South New Urban Area, Tan Phu Ward, District 7, Ho Chi Minh City, VIETNAM
Tel. 0314996293

1.4 Emergency telephone number

In case of medical emergency, please seek professional medical advice.

SECTION 2: Composition/information on ingredients

2.1 Substances / Mixtures

Ingredient(s)	CAS number	EC number	Classification	Weight percent
perboric acid (HBO(O ₂)), sodium salt, monohydrate	10332-33-9	231-556-4	Oxidising solids, Category 2 (H272) Acute toxicity - Inhalation, Category 3 (H331) Reproductive toxicity, Category 1B (H360) Acute toxicity - Oral, Category 4 (H302) Specific target organ toxicity - Single exposure, Category 3 (H335) Serious eye damage, Category 1 (H318)	30-50
disodium metasilicate	6834-92-0	229-912-9	Skin corrosion, Category 1B (H314) Specific target organ toxicity - Single exposure, Category 3 (H335) Corrosive to metals, Category 1 (H290) Serious eye damage, Category 1 (H318)	20-30
sodium alkylbenzenesulphonate	85117-50-6	285-600-2	Acute toxicity - Oral, Category 4 (H302) Skin irritation, Category 2 (H315) Serious eye damage, Category 1 (H318)	1-3

Workplace exposure limit(s), if available, are listed in subsection 8.1.
ATE, if available, are listed in section 11.

SECTION 3: Hazards identification

3.1 Classification of the substance or mixture

Reproductive toxicity, Category 1B
Skin corrosion, Category 1B
Acute toxicity, oral, Category 4
Serious eye damage, Category 1

3.2 Label elements



Signal word: Danger.

Hazard statements:

H360 - May damage fertility or the unborn child.
H314 - Causes severe skin burns and eye damage.

DUAL DIP

H302 - Harmful if swallowed.

Precautionary statements:

P201 - Obtain special instructions before use.

P260 - Do not breathe dust.

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

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.

P308 + P313 - IF exposed or concerned: Get medical advice or attention.

P310 - Immediately call a POISON CENTRE, doctor or physician.

3.3 Other hazards

No other hazards known. Exposure and appropriate engineering controls are specified in subsection 8.2 exposure controls.

SECTION 4: First aid measures**4.1 Description of first aid measures****General Information:**

Symptoms of intoxication may even occur after several hours. It is recommended to continue medical observation for at least 48 hours after the incident. If unconscious place in recovery position and seek medical advice. Provide fresh air. If breathing is irregular or stopped, administer artificial respiration. No mouth-to-mouth or mouth-to-nose resuscitation. Use Ambu bag or ventilator. IF exposed or concerned: Get medical advice or attention.

Inhalation:

Get medical attention or advice if you feel unwell.

Skin contact:

Wash skin with plenty of lukewarm, gently flowing water for at least 30 minutes. Take off immediately all contaminated clothing and wash it before reuse. Immediately call a POISON CENTRE, doctor or physician.

Eye contact:

Hold eyelids apart and flush eyes with plenty of lukewarm water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE, doctor or physician.

Ingestion:

Rinse mouth. Immediately drink 1 glass of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Keep at rest. Immediately call a POISON CENTRE, doctor or physician.

Self-protection of first aider:

Consider personal protective equipment as indicated in subsection 8.2.

4.2 Most important symptoms and effects, both acute and delayed**Inhalation:**

May damage fertility or the unborn child.

Skin contact:

Causes severe burns. May damage fertility or the unborn child.

Eye contact:

Causes severe or permanent damage.

Ingestion:

May damage fertility or the unborn child. Ingestion will lead to a strong caustic effect on mouth and throat and to the danger of perforation of oesophagus and stomach.

4.3 Indication of any immediate medical attention and special treatment needed

No information available on clinical testing and medical monitoring. Specific toxicological information on substances, if available, can be found in section 11.

SECTION 5: Firefighting measures**5.1 Extinguishing media**

Carbon dioxide. Dry powder. Water spray jet. Fight larger fires with water spray jet or alcohol-resistant foam.

5.2 Special hazards arising from the substance or mixture

No special hazards known.

5.3 Advice for firefighters

As in any fire, wear self contained breathing apparatus and suitable protective clothing including gloves and eye/face protection.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation. Do not breathe dust or vapour. Wear suitable protective clothing, gloves and eye/face protection.

6.2 Environmental precautions

Do not allow to enter drainage system, surface or ground water.

6.3 Methods and material for containment and cleaning up

Collect mechanically. Ensure adequate ventilation.

6.4 Reference to other sections

DUAL DIP

For personal protective equipment see subsection 8.2. For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Measures to prevent fire and explosions:

No special precautions required.

Measures required to protect the environment:

For environmental exposure controls see subsection 8.2.

Advice on general occupational hygiene:

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not mix with other products unless advised by Diversey. Wash hands before breaks and at the end of workday. Wash face, hands and any exposed skin thoroughly after handling. Take off immediately all contaminated clothing. Wash contaminated clothing before reuse. Store used personal protective equipment separately. Use personal protective equipment as required. Obtain special instructions before use. Avoid contact with skin and eyes. Do not breathe dust. Use only with adequate ventilation. See chapter 8.2, Exposure controls / Personal protection.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local and national regulations. Store in a closed container. Keep only in original packaging. For conditions to avoid see subsection 10.4. For incompatible materials see subsection 10.5.

7.3 Specific end use(s)

No specific advice for end use available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Workplace exposure limits

Air limit values, if available:

Ingredient(s)	Long term value(s)	Short term value(s)
perboric acid (HBO(O ₂)), sodium salt, monohydrate	0.5 mg/m ³	1 mg/m ³

Biological limit values, if available:

8.2 Exposure controls

The following information applies for the uses indicated in subsection 1.2 of the Safety Data Sheet. If available, please refer to the product information sheet for application and handling instructions. Normal use conditions are assumed for this section.

Recommended safety measures for handling the undiluted product:

Appropriate engineering controls: No special requirements under normal use conditions.
Appropriate organisational controls: Avoid direct contact and/or splashes where possible. Train personnel.

Personal protective equipment

Eye / face protection:

Safety glasses or goggles (EN 16321 / EN 166).

Hand protection:

Chemical-resistant protective gloves (EN 374). Verify instructions regarding permeability and breakthrough time, as provided by the gloves supplier. Consider specific local use conditions, such as risk of splashes, cuts, contact time and temperature.
 Suggested gloves for prolonged contact: Material: butyl rubber Penetration time: ≥ 480 min Material thickness: ≥ 0.7 mm
 Suggested gloves for protection against splashes: Material: nitrile rubber Penetration time: ≥ 30 min Material thickness: ≥ 0.4 mm
 In consultation with the supplier of protective gloves a different type providing similar protection may be chosen.

Body protection:

Wear chemical-resistant clothing and boots in case direct dermal exposure and/or splashes may occur (EN ISO 13982-1).

Respiratory protection:

If exposure to dust cannot be avoided use: half mask (EN 140) with particle filter P2 (EN 143) or full-face mask (EN 136) with particle filter P1 (EN 143) Consider specific local use conditions. In consultation with the supplier of respiratory protection equipment a different type providing similar protection may be chosen.

Environmental exposure controls:

Should not reach sewage water or drainage ditch undiluted or unneutralised.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Method / remark

DUAL DIP

Physical state: Solid
Colour: White
Odour: Product specific
Odour threshold: Not applicable
pH: Not applicable
Dilution pH: ≈ 12 (1%)
Melting point/freezing point (°C): Not determined
Initial boiling point and boiling range (°C): Not determined

ISO 4316
 Not relevant to classification of this product
 Not applicable to solids or gases

Flammability (liquid): Not applicable.
Flash point (°C): Not applicable.
Sustained combustion: Not applicable.
 (UN Manual of Tests and Criteria, section 32, L.2)

Evaporation rate: Not determined
Flammability (solid, gas): Not determined
Lower and upper explosion limit/flammability limit (%): Not determined
Vapour pressure: Not determined
Relative density: ≈ 0.95 (20 °C)
Relative vapour density: No data available.
Particle characteristics: Not determined.
Solubility in / Miscibility with water: Soluble
Partition coefficient: n-octanol/water No information available.

Not relevant to classification of this product

OECD 109 (EU A.3)
 Not applicable to solids
 Not relevant to classification of this product.

Substance data, partition coefficient n-octanol/water (log Kow): see subsection 12.3

Autoignition temperature: Not determined
Decomposition temperature: Not applicable.
Kinematic viscosity: Not determined
Explosive properties: Not explosive.
Oxidising properties: Not oxidising.

Not applicable to solids or gases

9.2 Other information

Surface tension (N/m): Not determined
Corrosion to metals: Not determined

Not applicable to solids or gases

SECTION 10: Stability and reactivity

10.1 Reactivity

No reactivity hazards known under normal storage and use conditions.

10.2 Chemical stability

Stable under normal storage and use conditions.

10.3 Possibility of hazardous reactions

No hazardous reactions known under normal storage and use conditions.

10.4 Conditions to avoid

None known under normal storage and use conditions.

10.5 Incompatible materials

Reacts with acids.

10.6 Hazardous decomposition products

None known under normal storage and use conditions.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Mixture data: .

Relevant calculated ATE(s):

ATE - Oral (mg/kg): 1400
 ATE - Inhalatory, mists (mg/l): 1.4

Substance data, where relevant and available, are listed below:.

Acute toxicity

Acute oral toxicity

Ingredient(s)	Endpoint	Value (mg/kg)	Species	Method	Exposure time (h)
perboric acid (HBO(O ₂)), sodium salt, monohydrate	LD ₅₀	890			
disodium metasilicate	LD ₅₀	770 - 820	Mouse	Method not given	ECHA Dossier 2020
sodium alkylbenzenesulphonate		438	Rat		

Acute dermal toxicity

Ingredient(s)	Endpoint	Value (mg/kg)	Species	Method	Exposure time (h)
perboric acid (HBO(O ₂)), sodium salt, monohydrate		> 2000	Rabbit	OECD 402 (EU B.3)	
disodium metasilicate	LD ₅₀	> 5000	Rat Guinea pig	Method not given	
sodium alkylbenzenesulphonate		No data available			

Acute inhalative toxicity

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time (h)
perboric acid (HBO(O ₂)), sodium salt, monohydrate	LC ₅₀	0.75			
disodium metasilicate	LC ₅₀	> 2.06	Rat	Method not given	
sodium alkylbenzenesulphonate		No data available			

Irritation and corrosivity

Skin irritation and corrosivity

Ingredient(s)	Result	Species	Method	Exposure time
perboric acid (HBO(O ₂)), sodium salt, monohydrate	Irritant			
disodium metasilicate	Corrosive		Method not given	
sodium alkylbenzenesulphonate	Irritant			

Eye irritation and corrosivity

Ingredient(s)	Result	Species	Method	Exposure time
perboric acid (HBO(O ₂)), sodium salt, monohydrate	Irritant			
disodium metasilicate	Corrosive		Method not given	
sodium alkylbenzenesulphonate	Severe damage			

Respiratory tract irritation and corrosivity

Ingredient(s)	Result	Species	Method	Exposure time
perboric acid (HBO(O ₂)), sodium salt, monohydrate	Not irritating to respiratory tract			
disodium metasilicate	Irritating to respiratory tract		Method not given	
sodium alkylbenzenesulphonate	Irritating to respiratory tract			

Sensitisation

Sensitisation by skin contact

Ingredient(s)	Result	Species	Method	Exposure time (h)
perboric acid (HBO(O ₂)), sodium salt, monohydrate	Not sensitising			
disodium metasilicate	Not sensitising	Mouse	OECD 429 (EU B.42)	
sodium alkylbenzenesulphonate	No data available			

Sensitisation by inhalation

Ingredient(s)	Result	Species	Method	Exposure time
perboric acid (HBO(O ₂)), sodium salt, monohydrate	Not sensitising			
disodium metasilicate	No data available			
sodium alkylbenzenesulphonate	No data available			

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

Mutagenicity

Ingredient(s)	Result (in-vitro)	Method (in-vitro)	Result (in-vivo)	Method (in-vivo)
perboric acid (HBO(O ₂)), sodium salt,	No data available		No data available	

DUAL DIP

monohydrate			
disodium metasilicate	No data available		No data available
sodium alkylbenzenesulphonate	No data available		No data available

Carcinogenicity

Ingredient(s)	Effect
perboric acid (HBO(O ₂)), sodium salt, monohydrate	No data available
disodium metasilicate	No data available
sodium alkylbenzenesulphonate	No data available

Toxicity for reproduction

Ingredient(s)	Endpoint	Specific effect	Value (mg/kg bw/d)	Species	Method	Exposure time	Remarks and other effects reported
perboric acid (HBO(O ₂)), sodium salt, monohydrate			No data available				
disodium metasilicate			No data available				
sodium alkylbenzenesulphonate			No data available				

Repeated dose toxicity

Sub-acute or sub-chronic oral toxicity

Ingredient(s)	Endpoint	Value (mg/kg bw/d)	Species	Method	Exposure time (days)	Specific effects and organs affected
perboric acid (HBO(O ₂)), sodium salt, monohydrate		No data available				
disodium metasilicate	NOAEL	> 227 - 237	Rat	Method not given		
sodium alkylbenzenesulphonate		No data available				

Sub-chronic dermal toxicity

Ingredient(s)	Endpoint	Value (mg/kg bw/d)	Species	Method	Exposure time (days)	Specific effects and organs affected
perboric acid (HBO(O ₂)), sodium salt, monohydrate		No data available				
disodium metasilicate		No data available				
sodium alkylbenzenesulphonate		No data available				

Sub-chronic inhalation toxicity

Ingredient(s)	Endpoint	Value (mg/kg bw/d)	Species	Method	Exposure time (days)	Specific effects and organs affected
perboric acid (HBO(O ₂)), sodium salt, monohydrate		No data available				
disodium metasilicate		No data available				
sodium alkylbenzenesulphonate		No data available				

Chronic toxicity

Ingredient(s)	Exposure route	Endpoint	Value (mg/kg bw/d)	Species	Method	Exposure time	Specific effects and organs affected	Remark
perboric acid (HBO(O ₂)), sodium salt, monohydrate			No data available					
disodium metasilicate			No data available					
sodium alkylbenzenesulphonate			No data available					

STOT-single exposure

Ingredient(s)	Affected organ(s)
perboric acid (HBO(O ₂)), sodium salt, monohydrate	No data available
disodium metasilicate	Respiratory tract
sodium alkylbenzenesulphonate	No data available

STOT-repeated exposure

Ingredient(s)	Affected organ(s)
perboric acid (HBO(O ₂)), sodium salt, monohydrate	No data available

DUAL DIP

disodium metasilicate	Not applicable
sodium alkylbenzenesulphonate	No data available

Aspiration hazard

Substances with an aspiration hazard (H304), if any, are listed in section 3. If relevant, see section 9 for dynamic viscosity and relative density of the product.

Potential adverse health effects and symptoms

Effects and symptoms related to the product, if any, are listed in subsection 4.2.

SECTION 12: Ecological information**12.1 Toxicity**

No data is available on the mixture.

Substance data, where relevant and available, are listed below:

Aquatic short-term toxicity

Aquatic short-term toxicity - fish

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time (h)
perboric acid (HBO(O ₂)), sodium salt, monohydrate	LC ₅₀	51	<i>Brachydanio rerio</i>	OECD 203, semi-static	96
disodium metasilicate	LC ₅₀	210	<i>Brachydanio rerio</i>	Method not given	96
sodium alkylbenzenesulphonate	LC ₅₀	1.18	<i>Fish</i>		96

Aquatic short-term toxicity - crustacea

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time (h)
perboric acid (HBO(O ₂)), sodium salt, monohydrate	EC ₅₀	11	<i>Daphnia magna Straus</i>	OECD 202, semi-static	48
disodium metasilicate	EC ₅₀	1700	<i>Daphnia</i>	Method not given	48
sodium alkylbenzenesulphonate	EC ₅₀	5.88	<i>Daphnia</i>	Method not given	48

Aquatic short-term toxicity - algae

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time (h)
perboric acid (HBO(O ₂)), sodium salt, monohydrate	EC ₅₀	3.3	<i>Pseudokirchneriella subcapitata</i>	OECD 201, static	72
disodium metasilicate	EC ₅₀	207	<i>Chlorella pyrenoidosa</i>	Method not given	72
sodium alkylbenzenesulphonate	EC ₅₀	1.9	<i>Not specified</i>	Method not given	96

Aquatic short-term toxicity - marine species

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time (days)
perboric acid (HBO(O ₂)), sodium salt, monohydrate		No data available			
disodium metasilicate		No data available			
sodium alkylbenzenesulphonate		No data available			

Impact on sewage plants - toxicity to bacteria

Ingredient(s)	Endpoint	Value (mg/l)	Inoculum	Method	Exposure time
perboric acid (HBO(O ₂)), sodium salt, monohydrate		No data available			
disodium metasilicate	EC ₅₀	> 100	<i>Activated sludge</i>	Method not given	3 hour(s)
sodium alkylbenzenesulphonate		No data available			

Aquatic long-term toxicity

Aquatic long-term toxicity - fish

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time	Effects observed
perboric acid (HBO(O ₂)), sodium salt, monohydrate		No data available				
disodium metasilicate		No data				

DUAL DIP

		available				
sodium alkylbenzenesulphonate	NOEC	3.1	Not specified	Method not given	72 hour(s)	

Aquatic long-term toxicity - crustacea

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time	Effects observed
perboric acid (HBO(O ₂)), sodium salt, monohydrate		No data available				
disodium metasilicate		No data available				
sodium alkylbenzenesulphonate		No data available				

Aquatic toxicity to other aquatic benthic organisms, including sediment-dwelling organisms, if available:

Terrestrial toxicity

Terrestrial toxicity - soil invertebrates, including earthworms, if available:

Terrestrial toxicity - plants, if available:

Terrestrial toxicity - birds, if available:

Terrestrial toxicity - beneficial insects, if available:

Terrestrial toxicity - soil bacteria, if available:

12.2 Persistence and degradability**Abiotic degradation**

Abiotic degradation - photodegradation in air, if available:

Abiotic degradation - hydrolysis, if available:

Abiotic degradation - other processes, if available:

Biodegradation

Ready biodegradability - aerobic conditions

Ingredient(s)	Inoculum	Analytical method	DT ₅₀	Method	Evaluation
perboric acid (HBO(O ₂)), sodium salt, monohydrate					Not applicable (inorganic substance)
disodium metasilicate					Not applicable (inorganic substance)
sodium alkylbenzenesulphonate					Readily biodegradable

Ready biodegradability - anaerobic and marine conditions, if available:

Degradation in relevant environmental compartments, if available:

12.3 Bioaccumulative potential

Partition coefficient n-octanol/water (log K_{ow})

Ingredient(s)	Value	Method	Evaluation	Remark
perboric acid (HBO(O ₂)), sodium salt, monohydrate	No data available			
disodium metasilicate	No data available			
sodium alkylbenzenesulphonate	No data available			

Bioconcentration factor (BCF)

Ingredient(s)	Value	Species	Method	Evaluation	Remark
perboric acid (HBO(O ₂)), sodium salt, monohydrate	No data available				
disodium metasilicate	No data available				
sodium alkylbenzenesulphonate	No data available				

12.4 Mobility in soil

Adsorption/Desorption to soil or sediment

Ingredient(s)	Adsorption	Desorption	Method	Soil/sediment	Evaluation
---------------	------------	------------	--------	---------------	------------

DUAL DIP

	coefficient Log Koc	coefficient Log Koc(des)		type	
perboric acid (HBO(O ₂)), sodium salt, monohydrate	No data available				
disodium metasilicate	No data available				
sodium alkylbenzenesulphonate	No data available				

12.5 Other adverse effects

No other adverse effects known.

SECTION 13: Disposal considerations**13.1 Waste treatment methods****Waste from residues / unused products:**

The concentrated contents or contaminated packaging should be disposed of by a certified handler or according to the site permit. Release of waste to sewers is discouraged. The cleaned packaging material is suitable for energy recovery or recycling in line with local legislation.

Empty packaging**Recommendation:**

Dispose of observing national or local regulations.

SECTION 14: Transport information**Land transport, Sea transport (IMDG), Air transport (ICAO-TI / IATA-DGR)**

14.1 UN number: 3262

14.2 UN proper shipping name:

Corrosive solid, basic, inorganic, n.o.s. (disodium trioxosilicate)

14.3 Transport hazard class(es):

Transport hazard class (and subsidiary risks): 8

14.4 Packing group: III**14.5 Environmental hazards:**

Environmentally hazardous: No

Marine pollutant: No

14.6 Special precautions for user: None known.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code: The product is not transported in bulk tankers.

Other relevant information:**IMO/IMDG**

EmS: F-A, S-B

The product has been classified, labelled and packaged in accordance with the requirements of national road transport regulations and the provisions of the IMDG Code. Transport regulations include special provisions for certain classes of dangerous goods packed in limited quantities.

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulations**

• Decree 108/2008/NP-CP Circular No.: 04/2012/TT-BCT Regulations on the Classification and Labeling of Chemicals

SECTION 16: Other information

The information in this document is based on our best present knowledge. However, it does not constitute a guarantee for any specific product features and does not establish a legally binding contract

SDS code: MS4000605

Version: 01.0

Revision: 2024-10-22

Abbreviations and acronyms:

- DNEL - Derived No Effect Limit
- PNEC - Predicted No Effect Concentration
- ATE - Acute Toxicity Estimate
- LD50 - Lethal Dose, 50% / Median Lethal dose
- LC50 - Lethal Concentration, 50% / Median Lethal Concentration
- EC50 - effective concentration, 50%
- NOEL - No observed effect level
- NOAEL - No observed adverse effect level
- STOT-RE - Specific target organ toxicity (repeated exposure)
- STOT-SE - Specific target organ toxicity (single exposure)
- OECD - Organisation for Economic Cooperation and Development
- H272 - May intensify fire; oxidiser.
- H290 - May be corrosive to metals.
- H302 - Harmful if swallowed.
- H303 - May be 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.
- H331 - Toxic if inhaled.
- H335 - May cause respiratory irritation.
- H360 - May damage fertility or the unborn child.

End of Safety Data Sheet