

## SAFETY DATA SHEET

Revision Date: 09/16/2011

Print Date: 8/26/2014

MSDS Number: R0275688

Version: 3.5

Advantage Plus™ 1400 deposit inhibitor  
™ Trademark, Solenis or its subsidiaries or  
affiliates, registered in various countries51355

### 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Ashland	Regulatory Information Number	1-800-325-3751
P.O. Box 2219	Telephone	614-790-3333
Columbus, OH 43216	Emergency telephone number	1-800-ASHLAND (1-800-274-5263)
Product name	Advantage Plus™ 1400 deposit inhibitor ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries	
Product code	51355	

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

Appearance: liquid, dark brown

DANGER! MAY BE HARMFUL IF SWALLOWED. CAUSES SEVERE BURNS OF THE EYES AND SKIN.

#### Potential Health Effects

##### **Exposure routes**

Inhalation, Skin absorption, Skin contact, Eye Contact, Ingestion

##### **Eye contact**

Can cause permanent eye injury. Symptoms include stinging, tearing, redness, and swelling of eyes. Can injure the cornea and cause blindness.

##### **Skin contact**

Can cause permanent skin damage. Symptoms may include redness, burning, and swelling of skin, burns, and other skin damage. The feeling of irritation or pain may be delayed.

##### **Ingestion**

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Swallowing this material may be harmful or fatal. Symptoms may include severe stomach and intestinal irritation (nausea, vomiting, diarrhea), abdominal pain, and vomiting of blood. Swallowing this material may cause burns and destroy tissue in the mouth, throat, and digestive tract. Low blood pressure and shock may occur as a result of severe tissue injury.

### Inhalation

Breathing of vapor or mist is possible. Breathing this material may be harmful or fatal. Symptoms may include severe irritation and burns to the nose, throat, and respiratory tract. Symptoms are not expected at air concentrations below the recommended exposure limits, if applicable (see Section 8.).

### Aggravated Medical Condition

Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: Skin, Upper respiratory tract, lung (for example, asthma-like conditions)

### Symptoms

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways), Cough, Difficulty in breathing, lung edema (fluid buildup in the lung tissue), lung damage, damage to the mouth, throat, and/or airways, shock

### Target Organs

No data

### Carcinogenicity

This material is not listed as a carcinogen by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), or the Occupational Safety and Health Administration (OSHA).

### Reproductive hazard

Ethylenediamine tetraacetic acid (EDTA) and its sodium salts have been reported to cause birth defects in laboratory animals. Birth defects occurred only at exposure levels that harmed the pregnant animal. These effects are likely associated with zinc deficiency due to the removal of zinc from the body by EDTA.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

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Hazardous Components	CAS-No. / Trade Secret No.	Concentration
ORGANIC ACID SALT	254504001-6208	>=5-<10%
ORGANIC SALT	254504001-5090	>=1-<1.5%
SODIUM HYDROXIDE	1310-73-2	>=1-<1.5%

### 4. FIRST AID MEASURES

#### Eyes

If material gets into the eyes, immediately flush eyes gently with water for at least 15 minutes while holding eyelids apart. If symptoms develop as a result of vapor exposure, immediately move individual away from exposure and into fresh air before flushing as recommended above. Seek immediate medical attention. Do not remove the victim from water access for transport to a medical facility unless instructed to do so by qualified medical personnel. If possible, continue flushing the eye gently with water while transporting the victim.

#### Skin

Immediately flush skin with water for at least 15 minutes while removing contaminated clothing and shoes. Seek immediate medical attention. Wash clothing before reuse and discard contaminated shoes.

#### Ingestion

Seek immediate medical attention. Do not induce vomiting. Vomiting will cause further damage to the mouth and throat. If individual is conscious and alert, immediately rinse mouth with water and give milk or water to drink. If possible, do not leave individual unattended.

#### Inhalation

If symptoms develop, immediately move individual away from exposure and into fresh air. Seek immediate medical attention; keep person warm and quiet. If person is not breathing, begin artificial respiration. If breathing is difficult, administer oxygen.

#### Notes to physician

**Hazards:** No information available.

**Treatment:** No information available.

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### 5. FIRE-FIGHTING MEASURES

#### Suitable extinguishing media

Dry chemical, Carbon dioxide (CO<sub>2</sub>), Water spray

#### Hazardous combustion products

Ammonia, toxic fumes, nitrogen oxides (NO<sub>x</sub>), carbon dioxide and carbon monoxide, Sulphur oxides, corrosive vapors, Sodium oxides

#### Precautions for fire-fighting

Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA). Use water spray to cool fire exposed containers and structures until fire is out if it can be done with minimal risk. Avoid spreading burning material with water used for cooling purposes.

### 6. ACCIDENTAL RELEASE MEASURES

#### Personal precautions

For personal protection see section 8. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

#### Environmental precautions

Prevent spreading over a wide area (e.g. by containment or oil barriers). Do not let product enter drains. Do not flush into surface water or sanitary sewer system.

#### Methods for cleaning up

Keep in suitable, closed containers for disposal. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

#### Other information

Comply with all applicable federal, state, and local regulations.

### 7. HANDLING AND STORAGE

#### Handling

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When diluting liquid caustic solutions, slowly add the caustic solution to lukewarm water (80-100 degrees F, 27-38 degrees C) in order to prevent heat buildup that could result in injury due to boiling or spattering of the solution. Never start with cold or hot water. Never add water to caustic. Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed.

### Storage

Store in closed containers in a dry, well-ventilated area. Keep from freezing.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Guidelines

SODIUM HYDROXIDE		1310-73-2
ACGIH	Ceiling Limit Value:	2 mg/m3
NIOSH	Ceiling Limit Value and Time Period (if specified):	2 mg/m3
OSHA Z1	Permissible exposure limit	2 mg/m3

### General advice

These recommendations provide general guidance for handling this product. Personal protective equipment should be selected for individual applications and should consider factors which affect exposure potential, such as handling practices, chemical concentrations and ventilation. It is ultimately the responsibility of the employer to follow regulatory guidelines established by local authorities.

### Exposure controls

Mechanical ventilation systems used to ventilate corrosive storage or process areas must be designed with components that are corrosion resistant.

### Eye protection

Chemical splash goggles and face shield (8" min.) in compliance with OSHA regulations are advised; however, OSHA regulations also permit other type safety glasses. (Consult your industrial hygienist.) Wear chemical splash goggles and face shield when there is potential for exposure of the eyes or face to liquid, vapor or mist. Maintain eye wash station in immediate work area.

### Skin and body protection

Wear appropriate chemical impervious clothing and boots whenever there is potential for skin contact with product. Launder clothing before reuse. Maintain safety shower at all locations where skin

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contact could occur. Contact your local safety equipment supplier to assist the facility in determining proper selection of personal protective equipment for the applications/operations present at your facility. Wear resistant gloves (consult your safety equipment supplier). Discard gloves that show tears, pinholes, or signs of wear.

### Respiratory protection

A NIOSH-approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any other circumstances where an air-purifying respirator may not provide adequate protection.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	liquid
Colour	dark brown
Odour	No information available.
Boiling point/boiling range	(ca.)212 °F / 100 °C @ 760.00 mmHg
Melting point/range	< 28 °F / < -2 °C
pH	13
Flash point	not applicable
Evaporation rate	(<)1
Vapour pressure	(ca.)23.300 hPa
Density	1.120 g/cm <sup>3</sup> @ 68 °F / 20 °C
Water solubility	completely soluble
log Pow	> 1

## 10. STABILITY AND REACTIVITY

### Stability

Stable.

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### Conditions to avoid

excessive heat, Exposure to moisture., Exposure to sunlight.

### Incompatible products

Acids, aluminum, Copper, Copper alloys, halogenated hydrocarbons, Metals, Nickel, organic  
nitro compounds, Oxidizing agents, reactive metals such as aluminum and magnesium, steel, Strong  
bases, water, Zinc

### Hazardous decomposition products

Ammonia, nitrogen oxides (NOx), toxic fumes, carbon dioxide and carbon monoxide, Sulphur  
oxides, corrosive vapors, Sodium oxides

### Hazardous reactions

Product will not undergo hazardous polymerization.

## 11. TOXICOLOGICAL INFORMATION

### Acute oral toxicity

Acute oral toxicity - : no data available  
Product

### Acute oral toxicity - Components

ORGANIC ACID SALT : LD 50: 630 - 1,260 mg/kg Species: Rat

SODIUM HYDROXIDE : LD Lo: 500 mg/kg Species: Rabbit

### Acute inhalation toxicity

Acute inhalation toxicity - : no data available  
Product

### Acute dermal toxicity

Acute dermal toxicity - : no data available  
Product

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### Acute dermal toxicity - Components

ORGANIC ACID SALT	: LD 50: > 5,000 mg/kg Species: Rabbit
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SODIUM HYDROXIDE	: LD 50: 1,350 mg/kg Species: Rabbit
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### Acute toxicity (other routes of administration)

Acute toxicity (other routes of administration)	: no data available
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## 12. ECOLOGICAL INFORMATION

### Biodegradability

Biodegradability - Product	: no data available
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### Bioaccumulation

Bioaccumulation - Product	: no data available
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### Ecotoxicity effects

#### Toxicity to fish

Toxicity to fish - Product	: LC 50: 3,536 mg/l Exposure time: 96 h Species: Oncorhynchus mykiss (rainbow trout)LC 50: 2,031 mg/l Exposure time: 96 h Species: Pimephales promelas (fathead minnow)
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#### Toxicity to fish - Components

ORGANIC ACID SALT	: LC 50: 472 - 500 mg/l Exposure time: 96 h Species: Bluegill (Lepomis macrochirus) Method: Static Remarks: Mortality
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SODIUM HYDROXIDE	: LC 50: 125 mg/l Exposure time: 96 h
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Species: Western mosquitofish ( <i>Gambusia affinis</i> ) Method: Static Remarks: Mortality
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### Toxicity to daphnia and other aquatic invertebrates.

Toxicity to daphnia and other aquatic invertebrates. - Product	: LC 50: 3,536 mg/l Exposure time: 48 h Species: Water flea ( <i>Daphnia magna</i> )
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### Toxicity to daphnia and other aquatic invertebrates. - Components

ORGANIC ACID SALT	: EC 50: 570 - 640 mg/l Exposure time: 24 h Species: Water flea ( <i>Daphnia magna</i> ) Remarks: Mortality
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SODIUM HYDROXIDE	: EC 50: 34.59 - 47.13 mg/l Exposure time: 48 h Species: Water flea ( <i>Daphnia magna</i> ) Remarks: Intoxication
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### Toxicity to algae

Toxicity to algae - Product	: no data available
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### Toxicity to bacteria

Toxicity to bacteria - Product	: no data available
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### Biochemical Oxygen Demand (BOD)

Biochemical Oxygen Demand (BOD)	: 80,000 mg/l Remarks: Based on a similar product formulation.
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### Chemical Oxygen Demand (COD)

Chemical Oxygen Demand (COD)	: 155,000 mg/l
	Method: Chemical oxygen demand
	Remarks: Based on a similar product formulation.

## 13. DISPOSAL CONSIDERATIONS

### Waste disposal methods

Dispose of in accordance with all applicable local, state and federal regulations.

## 14. TRANSPORT INFORMATION

### REGULATION

ID NUMBER	PROPER SHIPPING NAME	*HAZARD CLASS	SUBSIDIARY HAZARDS	PACKING GROUP	MARINE POLLUTANT /LTD. QTY.
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### U.S. DOT - ROAD

UN 3266	Corrosive liquid, basic, inorganic, n.o.s. (SODIUM HYDROXIDE)	8		III	
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### U.S. DOT - RAIL

UN 3266	Corrosive liquid, basic, inorganic, n.o.s. (SODIUM HYDROXIDE)	8		III	
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### U.S. DOT - INLAND WATERWAYS

UN 3266	Corrosive liquid, basic, inorganic, n.o.s. (SODIUM HYDROXIDE)	8		III	
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### TRANSPORT CANADA - ROAD

UN 3266	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (SODIUM HYDROXIDE)	8		III	
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### TRANSPORT CANADA - RAIL

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UN	3266	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (SODIUM HYDROXIDE)	8	III
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### TRANSPORT CANADA - INLAND WATERWAYS

UN	3266	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (SODIUM HYDROXIDE)	8	III
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### INTERNATIONAL MARITIME DANGEROUS GOODS

UN	3266	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (SODIUM HYDROXIDE)	8	III
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### INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO

UN	3266	Corrosive liquid, basic, inorganic, n.o.s. (SODIUM HYDROXIDE)	8	III
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### INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER

UN	3266	Corrosive liquid, basic, inorganic, n.o.s. (SODIUM HYDROXIDE)	8	III
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### MEXICAN REGULATION FOR THE LAND TRANSPORT OF HAZARDOUS MATERIALS AND WASTES

UN	3266	LIQUIDO CORROSIVO, BASICO, INORGANICO, N.E.P. (SODIUM HYDROXIDE)	8	III
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\*ORM = ORM-D, CBL = COMBUSTIBLE LIQUID

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

## 15. REGULATORY INFORMATION

California Prop. 65

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Proposition 65 warnings are not required for this product based on the results of a risk assessment.	
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**SARA Hazard Classification**  
**SARA 311/312 Classification**

Acute Health Hazard
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**SARA 313 Component(s)**

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**Notification status**

US. Toxic Substances Control Act	y (positive listing)
Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL). (Can. Gaz. Part II, Vol. 133)	y (positive listing)
Australia. Industrial Chemical (Notification and Assessment) Act	y (positive listing)
New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand	n (Negative listing)
Japan. Kashin-Hou Law List	n (Negative listing)
Korea. Toxic Chemical Control Law (TCCL) List	y (positive listing)
Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act	y (positive listing)
China. Inventory of Existing Chemical Substances	y (positive listing)

**Reportable quantity - Product**

US. EPA CERCLA Hazardous Substances (40 CFR 302)	98638 lbs
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**Reportable quantity-Components**

SODIUM HYDROXIDE	1310-73-2	1000 lbs
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	HMIS	NFPA
Health	3	3
Flammability	0	0
Physical hazards	1	
Instability		1
Specific Hazard	--	--

### 16. OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This MSDS has been prepared by Ashland's Environmental Health and Safety Department (1-800-325-3751).