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## SECTION 1. IDENTIFICATION

### Product identifier

Trade name : Advantage Plus™ 1465-KF deposit inhibitor  
 ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries

### Recommended use of the chemical and restrictions on use

<b>Details of the supplier of the safety data sheet</b> Solenis Canada ULC 942 Brant St. Burlington, ON L7R 3X8 Canada  RegulatoryRequestsNA@solenis.com	<b>Emergency telephone number</b> 1-844-SOLENIS (844-765-3647)  <b>Product Information</b> Contact your local Solenis representative
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## SECTION 2. HAZARDS IDENTIFICATION

### GHS classification in accordance with the Hazardous Products Regulations

Corrosive to metals : Category 1

Skin corrosion : Category 1

Serious eye damage : Category 1

### GHS label elements


Hazard pictograms :



Signal word : Danger

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

Precautionary statements : **Prevention:**  
 P234 Keep only in original packaging.  
 P264 Wash skin thoroughly after handling.  
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

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**Response:**

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.  
 P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.  
 P305 + P351 + P338 + P310 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/ doctor.  
 P363 Wash contaminated clothing before reuse.  
 P390 Absorb spillage to prevent material damage.

**Storage:**

P405 Store locked up.

**Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**

None known.

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**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substance / Mixture : Mixture

**Components**

Chemical name	CAS-No.	Concentration (% w/w)
sodium hydroxide	1310-73-2	>= 1.5 - < 5


Actual concentration or concentration range is withheld as a trade secret

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**SECTION 4. FIRST AID MEASURES**

General advice : Move out of dangerous area.  
 Consult a physician.  
 Show this safety data sheet to the doctor in attendance.  
 Do not leave the victim unattended.

If inhaled : Move to fresh air.  
 If breathed in, move person into fresh air.  
 Keep patient warm and at rest.  
 If unconscious, place in recovery position and seek medical advice.  
 If symptoms persist, call a physician.


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In case of skin contact	: If on skin, rinse well with water. Wash contaminated clothing before re-use.
In case of eye contact	: In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Continue rinsing eyes during transport to hospital. Remove contact lenses. Protect unharmed eye.
If swallowed	: Get medical attention immediately. Do NOT induce vomiting. Rinse mouth with water. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.
Most important symptoms and effects, both acute and delayed	: Causes serious eye damage. Causes severe burns. Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: irritation (nose, throat, airways) Cough lung edema (fluid buildup in the lung tissue) Difficulty in breathing
Notes to physician	: No hazards which require special first aid measures.

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## SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water spray Foam Carbon dioxide (CO2) Dry chemical
Unsuitable extinguishing media	: High volume water jet
Specific hazards during firefighting	: Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	: Carbon monoxide Carbon dioxide (CO2) Oxides of phosphorus Sulphur oxides corrosive vapors Sodium oxides toxic fumes

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- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.  
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.  
Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent product from entering drains.  
Prevent further leakage or spillage if safe to do so.  
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

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## SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Do not breathe vapours/dust.  
When diluting, always add the product to water. Never add water to the product.  
Container hazardous when empty.  
Avoid contact with skin and eyes.  
Smoking, eating and drinking should be prohibited in the application area.  
For personal protection see section 8.  
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.  
Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
Observe label precautions.  
Electrical installations / working materials must comply with the technological safety standards.
- Further information on storage stability : No decomposition if stored and applied as directed.

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## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
sodium hydroxide	1310-73-2	(c)	2 mg/m3	CA AB OEL
		C	2 mg/m3	CA BC OEL
		C	2 mg/m3	CA QC OEL

**Engineering measures** : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

### Personal protective equipment

#### Hand protection

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Safety glasses


Skin and body protection : Wear as appropriate:  
 Impervious clothing  
 Chemical resistant apron  
 Safety shoes  
 Choose body protection according to the amount and concentration of the dangerous substance at the work place.  
 Wear resistant gloves (consult your safety equipment supplier).  
 Discard gloves that show tears, pinholes, or signs of wear.

Hygiene measures : Wash hands before breaks and at the end of workday.  
 When using do not eat or drink.  
 Ensure that eyewash stations and safety showers are close to the workstation location.  
 When using do not smoke.


## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : brown

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Odour : No data available  
  
 Odour Threshold : No data available  
  
 pH : 13.2  
  
 Melting point/freezing point : -1.1 °C  
  
 Boiling point/boiling range : > 100 °C  
  
 Flash point : Not applicable  
  
 Evaporation rate : No data available  
  
 Flammability (solid, gas) : No data available  
  
 Self-ignition : No data available  
  
 Upper explosion limit / Upper flammability limit : No data available  
  
 Lower explosion limit / Lower flammability limit : No data available  
  
 Vapour pressure : 32 hPa (25 °C)  
 Calculated Vapor Pressure  
  
 Relative vapour density : No data available  
  
 Relative density : No data available  
  
 Density : 1.10 g/cm<sup>3</sup> (25 °C)  
  
 Solubility(ies)  
     Water solubility : No data available  
  
     Solubility in other solvents : No data available  
  
 Partition coefficient: n-octanol/water : No data available  
  
 Decomposition temperature : No data available  
  
 Viscosity  
     Viscosity, dynamic : No data available  
  
     Viscosity, kinematic : No data available  
  
 Oxidizing properties : No data available

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Metal corrosion rate : Corrosive to Steel

## SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : Product will not undergo hazardous polymerization.

Conditions to avoid : excessive heat  
Exposure to sunlight.

Incompatible materials : Acids  
alkalis  
halogenated hydrocarbons  
Metals  
nitrites  
organic nitro compounds  
Oxidizing agents  
sulphites

Hazardous decomposition products : Carbon monoxide  
Carbon dioxide (CO<sub>2</sub>)  
Oxides of phosphorus  
Sulphur oxides  
corrosive vapors  
Sodium oxides  
toxic fumes

## SECTION 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

Not classified based on available information.

### Components:

#### sodium hydroxide:


Acute oral toxicity : LDLo (Rabbit): 500 mg/kg

### Skin corrosion/irritation

Causes severe burns.

### Product:

Remarks : Causes severe skin burns and eye damage.  
The feeling of irritation or pain may be delayed.

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**Components:**

**sodium hydroxide:**

Result : Causes severe burns.

**Serious eye damage/eye irritation**

Causes serious eye damage.

**Product:**

Remarks : May cause irreversible eye damage.

**Components:**

**sodium hydroxide:**

Result : Corrosive to eyes

**Respiratory or skin sensitisation**

**Skin sensitisation**

Not classified based on available information.

**Respiratory sensitisation**

Not classified based on available information.

**Germ cell mutagenicity**

Not classified based on available information.

**Carcinogenicity**

Not classified based on available information.

**Reproductive toxicity**

Not classified based on available information.

**STOT - single exposure**

Not classified based on available information.

**STOT - repeated exposure**

Not classified based on available information.

**Aspiration toxicity**


Not classified based on available information.

**Further information**

**Product:**

Remarks : No data available



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## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Components:

#### **sodium hydroxide:**

Toxicity to fish : LC50 (Gambusia affinis (Mosquito fish)): 125 mg/l  
 Exposure time: 96 h  
 Method: Static  
 Remarks: Mortality

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 34.59 - 47.13 mg/l  
 Exposure time: 48 h  
 Remarks: Intoxication

#### **Persistence and degradability**

No data available

#### **Bioaccumulative potential**

No data available

#### **Mobility in soil**

No data available

#### **Other adverse effects**

#### Product:

Additional ecological information : No data available


## SECTION 13. DISPOSAL CONSIDERATIONS

### **Disposal methods**

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.

Do not dispose of waste into sewer.  
 Do not contaminate ponds, waterways or ditches with chemical or used container.  
 Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.  
 Dispose of as unused product.  
 Empty containers should be taken to an approved waste handling site for recycling or disposal.  
 Do not re-use empty containers.

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## SECTION 14. TRANSPORT INFORMATION

### International Regulations

#### IATA-DGR

UN number : UN 1760  
 Proper shipping name : Corrosive liquid, n.o.s. (SODIUM HYDROXIDE)  
 Class : 8  
 Packing group : III  
 Packing instruction (cargo aircraft) : 856  
 Packing instruction (passenger aircraft) : 852

#### IMDG-Code

UN number : UN 1760  
 Proper shipping name : CORROSIVE LIQUID, N.O.S. (SODIUM HYDROXIDE)  
 Class : 8  
 Packing group : III  
 EmS Code : F-A, S-B  
 Marine pollutant : no

### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

### National Regulations

#### TDG

UN number : UN 1760  
 Proper shipping name : CORROSIVE LIQUID, N.O.S. (SODIUM HYDROXIDE)  
 Class : 8  
 Packing group : III  
 ERG Code : 154


### Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

## SECTION 15. REGULATORY INFORMATION

### The components of this product are reported in the following inventories:

TCSI : On the inventory, or in compliance with the inventory  
 TSCA : All substances listed as active on the TSCA inventory  
 AIIC : On the inventory, or in compliance with the inventory  
 DSL : All components of this product are on the Canadian DSL  
 ENCS : Not in compliance with the inventory

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KECI : On the inventory, or in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

NZIOC : On the inventory, or in compliance with the inventory

#### Canadian lists

No substances are subject to a Significant New Activity Notification.

## SECTION 16. OTHER INFORMATION

#### Further information

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#### Full text of other abbreviations

CA AB OEL : Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)

CA BC OEL : Canada. British Columbia OEL


CA QC OEL : Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants

CA AB OEL / (c) : ceiling occupational exposure limit

CA BC OEL / C : ceiling limit

CA QC OEL / C : Ceiling

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIOC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution

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Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data

SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The 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, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

CA / EN