

SAFETY DATA SHEET



SDS No.: 20028009
 Revision: February 14, 2020
 Date Created: October 16, 2000

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: Dakota Brite Plus
General Use: Aluminum & Stainless Steel Cleaner (Concentrate)
Product Description: Blue Liquid with Citrus Odor

MANUFACTURER
 Dakota Ag Innovations, LLC
 40690 253rd Street
 Mitchell, South Dakota 57301

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2. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW

GHS CLASSIFICATION OF SUBSTANCE

Flammable Liquid	Not Classified Under GHS and Not Applicable
Aspiration Toxicity	Not Classified Under GHS and Not Applicable
Skin Corrosion/Irritation	Category 1B - Phosphoric Acid; Hydrofluoric Acid
Eye Corrosion/Irritation	Category 1 - Phosphoric Acid; Hydrofluoric Acid
Carcinogenicity	Not Classified Under GHS
Specific Organ Toxicity Repeated Exposure	Not Classified Under GHS
Specific Organ Toxicity Single Exposure	Not Classified Under GHS
Reproductive Toxicity	Not Classified Under GHS
Acute Toxicity	Category 2 - dermal (Hydrofluoric Acid)
Germ Cell mutagenicity	Not Classified Under GHS
Corrosive to Metals	Not Determined
Hazardous to the aquatic environment	See Section 12 for information

Hazard Category - means the division of criteria within each hazard class, e.g. acute toxicity includes five hazard categories and flammable liquids include four hazard categories. These categories compare hazard severity within a hazard class. "GHS Classification of Substance" means the material hazard class under that particular category and should not be taken as a comparison of hazard categories more generally. Degree of severity under GHS is "1" being the most severe and sequential numbers indicating correspondingly less severity. "Not Classified Under GHS" does not have characteristics that fall into any of the categories for that hazard class.

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GHS LABEL ELEMENTS



eye, skin,
respiratory system



skin,
respiratory system

DANGER

Hazard Statements

H318 - Causes serious eye damage

H314 - Causes severe skin burns and eye damage in undiluted form.

H331 - Toxic if inhaled as a concentrate in mist form.

Precautionary Statements

General:

P101-If medical advice is needed, have product container or label at hand.

P102 - Keep out of reach of children.

P103-Read label before use.

Prevention:

P280 - Wear goggle eye protection when spraying this product. Avoid wearing contact lens when spraying this product undiluted form.

P261 - Avoid breathing mist spray in concentrated form.

P280 - Wear protective gloves when handling concentrated product with possible direct skin exposure.

Response:

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.

P310 - Immediately seek medical attention if symptoms persist more than a short time after exposure and completing response.

P304+P340 - IF INHALED: Remove person to fresh air. Seek IMMEDIATE medical attention if exposure to concentrated mist.

P303+P361+P353 - IF ON SKIN: Take off immediately all contaminated clothing. Rinse skin immediately with water if exposed.

Storage/Disposal:

P403+P235+P404-Store in well-ventilated place. Keep cool. Store in closed container.

P501-Dispose of contents/container in accordance with local/regional/federal regulations.

UN GHS

This product is acidic and corrosive and contains fluoride ion. Fluoride ion can cause delayed symptoms up to 24 hours depending on the concentration of HF. Full body exposure to HF at the concentration in this product can cause delayed response and irreversible damage to the skeletal system if first aid is not immediate. Calcium gluconate gel (reacts with HF and neutralizes its effects on bone) should be readily available where this product is routinely used in concentrated form.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Component</u>	<u>wt%</u>	<u>CAS Registry #</u>
Sodium Olefin Sulfonate (C14 - C16)	<1	68439-57-6
Sodium Xylene Sulfonate	<0.6	68585-34-2
Hydrofluoric Acid	7 - 8	7664-93-9
Phosphoric Acid	2 - 3	7664-38-2
Alcohol Ethoxylated	1 - 3	Mixture
Sodium MetaSilicate Pentahydrate	1.5 - 2.5	6834-92-0
Sodium Alkyl Ether Sulfate	2 - 3	68585-34-2

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4. FIRST AID MEASURES

INHALATION:

Remove to fresh air and keep at rest in a comfortable position. Get medical attention if symptoms persist after moving to fresh air. Give oxygen if available, symptoms persist, and medical attention is not immediate.

EYE CONTACT:

Remove contact lens (if present). Rinse eyes immediately with plenty of clean water for at least 15 minutes. If necessary, gently hold the eyelid open during the flush. Seek medical attention following initial eye washing. Product is caustic and irreversible eye damage can occur if material is not successfully removed from the eyes.

SKIN CONTACT:

Immediately wash skin with mild soap solution to remove material from skin. Remove affected clothing and launder prior to re-use. If skin damage occurs other than redness, seek medical attention and provide this SDS to attending medical personnel. Application of 2.5 to 33% Calcium gluconate or carbonate gel or slurry is recommended for dermal treatment immediately after exposure even if no effects are seen as HF has a delayed response with skin exposure.

INGESTION:

Ingestion is not a likely route of exposure based on commercial product use. If ingestion occurs, seek immediate medical attention. Do not induce vomiting or give anything but water by mouth without being directed to do so by POISON CONTROL or attending medical personnel.

5. FIRE FIGHTING MEASURES

Flashpoint and Method:	> 164 °F/93 °C
Flammable Limits:	Not Determined
Autoignition Temperature:	Not Determined

GENERAL HAZARD:

Water based and not flammable. Heated liquid may create a corrosive mist during a fire. Hydrogen fluoride is non-combustible but may create irritating and corrosive fumes of fluoride when heated or in combination with steam or water. Since hydrogen fluoride does not burn, use an extinguishing agent suitable for surrounding fire. For fires involving hydrofluoric acid, apply water in flooding quantities. Hydrofluoric acid and various metals may form hydrogen creating a fire hazard.

FIRE FIGHTING INSTRUCTIONS:

Suitable extinguishing media include: carbon dioxide or dry chemical or other media suitable for hydrocarbon fires. Unsuitable extinguishing media include: water spray. However, if water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible explosion when exposed to extreme heat.

FIRE FIGHTING EQUIPMENT:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. For small outdoor fires which may be easily extinguished with a portable fire extinguisher, use of any SCBA may not be necessary.

FURTHER INFORMATION:

During a fire, smoke may contain the original material in addition to combustion products which might be more irritating. Residue remaining following a fire needs to be evaluated for disposal options.

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HAZARDOUS COMBUSTION PRODUCTS:

Carbon monoxide, carbon dioxide, fluorides and phosphates and organics depending on the heat of the fire.

6. ACCIDENTAL RELEASE MEASURES

LAND SPILL RESPONSE:

Absorb small spills with inert material such as sand or earth. Containerize waste material. Dike large spills to contain the area of the spill. Use clean up procedures that minimize contamination to earth or water bodies. Product will contribute fluoride and phosphate to the soils.

WATER SPILL:

Product is water based and will immediately mix with water and is not recoverable. Product contributes surfactants, fluorides, and phosphates to the water body. A small spill should not significantly impact the water body.

RECOMMENDED DISPOSAL:

Disposal options may be dictated by other materials mixed with this material. Dispose of in accordance with local, state, and federal regulations using methods which consider recycling/reclamation.

7. HANDLING AND STORAGE

STORAGE TEMPERATURE: Ambient

STORAGE PRESSURE: Atmospheric

GENERAL:

Keep the container tightly closed. Store in a dry, cool, and well-ventilated place away from incompatible materials. Hydrofluoric acid reacts with glass, concrete, metals, other acids, oxidizers, reducers, alkalis, and combustibles. Store in containers made of a material resistant to HF. Do not store beyond manufacturer's identified shelf date as container material can be impacted by the product over time.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200 and other agencies)

Component	EXPOSURE LIMITS 8 hrs TWA (ppm)				
	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>NIOSH REL</u>	<u>AIHA WEEL</u>	<u>Other</u>
Hydrofluoric Acid	2.3 mg/m ³ Ceiling	2.3 mg/m ³ Ceiling	2.3 mg/m ³ Ceiling		
Phosphoric Acid	1 mg/m ³ TWA 3 mg/m ³ Ceiling	1 mg/m ³ TWA 3 mg/m ³ Ceiling	1 mg/m ³ TWA 3 mg/m ³ Ceiling		
Sodium Olefin Sulfonate (C14-16)	None Established	None Established	None Established		
Sodium metasilicate	None Established	None Established	None Established		

ENGINEERING CONTROLS:

Provide adequate general and local exhaust ventilation to maintain levels below established exposure limits. Provide eyewash stations and safety showers in locations available to material users if routinely using the product. Provide hand washing facilities for routine use by personnel using the material.

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PERSONAL PROTECTION:

Splash goggles and apron should be worn when pouring this material to avoid contact with the liquid. Hand protection is mandatory when there is possible direct contact with the concentrated product. Glove choice should be appropriate for the chemical blend and the specific activity being performed. NOTE: nitrile gloves are a general purpose glove available in a wide variety of thicknesses and protect against most chemicals. Use a thick glove with protection to the elbow. Respiratory protection should be appropriate for acid mist (specifically HF) exposure and utilized if ventilation cannot be established to adequately maintain exposure limits such as might occur when cleaning up spills. Avoid creating mists of concentrated product as respiratory and skin protection may not be adequate to protect against a mist.

EXPOSURE EVALUATION:

Personal exposure monitoring can be performed by the employer to determine his/her employee exposures to the product during routine use at the facility. It is beyond the responsibility of the product supplier to estimate/determine airborne exposure in a user's facility.

9. PHYSICAL AND CHEMICAL PROPERTIES

Vapor Pressure:	Not Determined	Vapor Density:	Heavier than air
Specific Gravity:	1.05	Evaporation Rate:	Not Determined
Solubility in Water:	Negligible	Freezing Point:	Not Determined
		Odor:	citrus
pH:	<2	Appearance:	blue liquid
Boiling Point:	Not Determined	Physical State:	liquid
Viscosity:	Not Determined	Flammable Range:	Not Determined
Flash Point:	> 164 °F/93 °C	VOC content:	Not Determined

10. STABILITY AND REACTIVITY

GENERAL:

No dangerous reactions known under normal use conditions. Direct contact with some metals can produce hydrogen gas. Reacts with both glass and all silicon based materials and some metals. Do not store in containers other than its original container.

INCOMPATIBLE MATERIALS AND CONDITIONS TO AVOID:

Alkaline materials. Metal containers and glass containers.

HAZARDOUS DECOMPOSITION:

None if maintained in original container.

11. TOXICOLOGICAL INFORMATION

TOXICITY TO ANIMALS:

<u>Component</u>	<u>Acute Test</u>	<u>Value</u>	<u>Species</u>
Phosphoric Acid	LD50 oral	2600 mg/kg	Rat
Phosphoric Acid	LD50 dermal	2740 mg/kg	Rabbit
Phosphoric Acid	LC50 inhalation	850 mg/kg-1hr	Rat
Hydrofluoric Acid	LC50 inhalation	2240 - 2340 ppm - 1 hr	Rat
Hydrofluoric Acid	LD100 oral	80 mg/kg	Guinea Pig
Hydrofluoric Acid	LD50 intraperitonea	400 mg/kg	Rat

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Sodium Olefin Sulfonate (C14-C16)	LD50 dermal	>2000 mg/kg	Rabbit
Sodium Olefin Sulfonate (C14-C16)	LD50 oral	>2000 mg/kg	Rat
Sodium metasilicate pentahydrate	LD50 oral	1152 - 1349 mg/kg	Rat
Ethoxylated Alcohols	LD50 dermal	1000 - 2000 mg/kg	Rat
Ethoxylated Alcohols	LD50 oral	1000 - 2000 mg/kg	Rat

ROUTES OF ENTRY:

Normal use routes of entry include eye, skin, and respiratory tract.

CHRONIC EFFECTS ON HUMANS:

Eyes:

Contains multiple serious eye irritants and is corrosive with low pH. Effects may be irreversible if immediate irrigation of the eye is not performed and contact lenses (if worn) are not removed and discarded.

Skin:

HF component is an inorganic acid that is highly corrosive and readily penetrates the skin causing deep tissue layer destruction. Concentrations of 7% have been shown to produce delayed effects of up to 1 hour after exposure if the area is large and no immediate first aid is performed.

Ingestion:

Product is expected to be corrosive to the digestive system if a sufficient quantity is ingested. Small quantities are not as serious, however, the product contains fluoride ion which can reduce serum calcium levels resulting in symptoms of hypocalcemia.

Inhalation:

Acid concentrations are not sufficient to present a vapor hazard. Inhalation as a mist can be corrosive to the nose and respiratory system. These effects may not be reversible depending on the amount inhaled.

12. ECOLOGICAL INFORMATION

<u>Species</u>	<u>Test Information</u>	<u>Concentration</u>	<u>Component</u>
Freshwater Fish	LC50 - 96hr	98-106 mg/L	Phosphoric Acid
Water Flea	EC50 - 48 hr	>100 mg/L	Phosphoric Acid
Algae	EC50 - 72 hr	42.3 mg/l	Sodium Olefin Sulfonate (C14-16)
Crustacea	EC50 - 48 hr	4.48 mg/l	Sodium Olefin Sulfonate (C14-16)
Fish	LC50 - 96 hr	2.6 mg/l	Sodium Olefin Sulfonate (C14-16)
Fish	EC50 - 48 hr	270 mg/l	Hydrofluoric Acid
Fish	LC50 - 96 hr	>0.1 - 1 mg/l	Ethoxylated Alcohol
Daphnia	EC50 - 72 hr	>0.1 - 1 mg/l	Ethoxylated Alcohol
Green Algae	EC50 - 72 hr	>0.1 - 1 mg/l	Ethoxylated Alcohol

PRODUCTS OF BIODEGRADATION:

Components readily biodegrade and products of biodegradation are less toxic than the chemicals, themselves. Phosphate component will provide nutrition to plant material in a water body.

13. DISPOSAL CONSIDERATIONS

Dispose of any waste in compliance with local, state, and federal regulations. Determine EPA RCRA waste categorization at the time of disposal as mixing with other materials may change its categorization. Containers may contain residue that needs to be addressed at time of disposal. Recycling containers needs to address any remaining residues. Product is corrosive based on pH but can be neutralized for disposal.

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14. TRANSPORT INFORMATION

The following proper shipping name, hazard class and packing group are in accordance to 49 CFR Department of Transportation (U.S. DOT) regulatory requirements from 172.101 Hazardous Materials Table

49 CFR Shipping Information	Dakota Brite Plus
Symbols	"G" - identifies proper shipping names for which one or more technical names of the hazardous material must be entered in parantheses, in association with the basic description. See 172.203(k)
UN Number	UN1790
Proper Shipping Name	Hydrofluoric Acid Solution (<8%)
Hazard Class	8
Packing Group	II
Label Codes	8, 6.1
Special Provisions (172.102)	A6, A7, B15, IB2, N5, N34, T8, TP2
Packaging - Exceptions	173.154
Packaging - Nonbulk	173.202
Packaging - bulk	173.243
Quantity Limitations - Passenger aircraft/rail	1L
Quantity Limitations - Cargo aircraft only	30L
Vessel stowage - Location	D
Vessel stowage - Other	12,25, 40

INTERNATIONAL AIR TRADE ASSOCIATION (IATA)

IATA 58th Edition Information	Dakota Brite Plus
UN Number	UN1790
Proper Shipping Name Description	Hydrofluoric Acid Solution (<8%)
Class or Division	8, 6.1
Hazard Label(s)	Corrosive & Toxic
Packing Group	II
EQ - 2.6 Dangerous Goods in Excepted Quantities	E2
Passenger Aircraft - Limited Quantity Packing Instructions	Y840
Passenger Aircraft - Limited Quantity Max net Qty/Pkg	0.5 L
Passenger Aircraft - Packing Instructions	851
Passenger Aircraft - Quantity Max Net Qty/Pkging	1L
Cargo Aircraft only - Packing Instructions	855
Cargo Aircraft only - Max Net Qty/Pkging	30L
Special Provisions 4.4	Blank
ERG Code	8P

INTERNATIONAL MARITIME DANGEROUS GOODS CODE (IMDG CODE)

IMDG 2016 EDITION	Dakota Brite Plus
UN Number	UN1760
Proper Shipping Name Description	CORROSIVE LIQUID N.O.S.
Class or Division	8
Subsidiary Risks	
Packing Group	II
Special Provisions	274
Limited Quantities	1L
Excepted Quantities	E2

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Packing Instructions	P001
Packing Provisions	
IBC Instructions 4.1.4	IBC02
IBC Provisions 4.1.4	
Portable tanks and bulk containers - tank instructions	T11
Portable tanks and bulk containers - provisions	T2,TP27
EmS	F-A,S-B
Stowage and Handling	CATEGORY B SW2
Segregation	
Properties and observations	Causes burns to skin, eyes, mucous membranes

15. REGULATORY INFORMATION

Chemical Inventory Status

Ingredients listed on: TSCA, DSL, Japan, and EC inventories.

SARA Section 302 - Emergency Planning Notification -

Hydrofluoric acid, Phosphoric Acid

SARA Section 304 - Emergency Release Notification -

Hydrofluoric acid, Phosphoric Acid

SARA 311/312 - Hazard categories for SARA Section 311/312 Reporting -

Acute, Chronic health hazard

CERCLA - Hazardous Substance -

RCRA Hazardous Waste Classification -

Corrosive

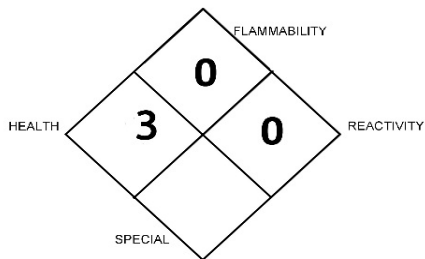
California Proposition 65:

No ingredients listed.

16. OTHER INFORMATION

UNITED STATES NATIONAL FIRE PROTECTION ASSOCIATION (U.S. NFPA)

NFPA 704 "fire diamond" is used by emergency personnel to quickly identify the risks posed by the material during response to a fire or a spill or other unusual event.



NFPA rating explanation as applied to Dakota Brite Plus

FLAMMABILITY 0 - Materials that will not burn under typical fire conditions including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 820⁰C/1500⁰F for a period of 5 minutes

HEALTH 3 - Short exposure could cause serious temporary or moderat residual injury.

REACTIVITY 0 - Normally stable, even under fire exposure conditions, and is not reactive with water.

SPECIAL - contains special symbols applicable to the material. In this case there are no applicable special conditions.

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CREATION/REVISION SUMMARY:

Created on:
October 16, 2000; product formulation changes
and update to GHS format - February 14, 2020

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