Procter & Gamble
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MATERIAL SAFETY DATA SHEET

MSDS #: **FH/H/2002/LDLS-59AGPZ** Issue Date: **4/24/02**
Supersedes: **N/A** Issue Date: N/A

SECTION I - PRODUCT IDENTIFICATION

Identity: **Granular Laundry Detergent**
Brands: **ARIEL** **(UC – Distributed in US)**

Hazard Rating:			
	Health:	1	4= EXTREME
	Flammability:	0	3= HIGH
	Reactivity:	0	2= MODERATE
			1= SLIGHT

Emergency Telephone Number: 1-888-774-9579 or call local Poison Control Center.

SECTION II - COMPOSITION AND INGREDIENTS

Ingredients/Chemical Name: Biodegradable surfactants and enzymes.

Hazardous Ingredients as defined by OSHA, 29 CFR 1910.1200., and/or WHMIS under the HPA:

Chemical Name	Common Name	CAS No.	Recommended Limits	Composition Range	LD50 and/or LC50
Sodium carbonate	Soda ash	497-19-8	N/K	15-40%	1.9 g/kg (rats, oral)
Subtilisin*	Proteolytic enzyme	9014-01-1	NIOSH/ACGIH STEL 0.00006 mg/m³	<0.1%	> 5 g/kg (rats, oral)
Linear alkyl benzene sulfonate	C12.3 LAS	68081-81-2	N/K	5-10%	0.7-1.3 g/kg (rats, oral)
High solubility alkyl sulfate	Anionic surfactant	Proprietary	NK	3-7%	2.1 g/kg (rats, oral)

Under normal consumer use, this product would not constitute a hazardous product under US OSHA Hazard Communication. With increased exposure (compared with consumer use) this mixture, when tested as a whole, is considered an inhalation hazard (enzymes) and an eye irritant within the meaning of the OSHA Hazard Communication Standard.

*Subtilisin is listed on Table Z-1-A (1989 Air Contaminants Rule - 29 CFR 1910.1000). Though Table Z-1-A was revoked on 6/30/93, the following U.S. states continue to enforce Table Z-1-A limits: Alaska, Connecticut, Minnesota, Michigan, New York, Tennessee, Vermont, and Washington. The OSHA STEL (as listed on Table Z-1-A) is 0.00006 mg/m3.

SECTION III - HAZARDS IDENTIFICATION

Health Hazards (Acute and Chronic):

Ingestion: May cause transient gastrointestinal irritation.

Eye Contact: Contact may cause mild, transient irritation.

Skin: None.

Inhalation: Heavy exposure to dust may cause transient respiratory tract irritation. Prolonged heavy exposure to dust may cause respiratory sensitization.

Signs and Symptoms of Exposure:

Ingestion: Possible mild gastrointestinal irritation with nausea, vomiting, and/or diarrhea.

Eye Contact: Eye contact with the product or its aqueous solution may produce transient superficial irritation.

Skin: None.

Inhalation: Heavy exposure to dust may cause transient respiratory tract irritation.

SECTION IV - FIRST AID INFORMATION

Emergency and First Aid Procedures:

Ingestion: Give milk or water.

Eye Contact: Flush eyes with water for 15 minutes.

Skin: Rinse exposed area with water.

Inhalation: Leave dusty area. In rare cases a respiratory reaction can occur which may include tightness of chest and difficulty breathing. If this occurs, seek medical attention immediately.

Other: Consumer product packages have a caution statement: "CAUTION: EYE IRRITANT. MAY BE HARMFUL IF SWALLOWED. In case of eye contact, flush with water. If swallowed, give a glassful of water or milk. Call a physician. KEEP OUT OF REACH OF CHILDREN."

SECTION V - FIRE FIGHTING INFORMATION

Flash Point: N/A **Explosive Limits**: *LEL:* N/A

Method Used: N/A *UEL:* N/A

Extinguishing Media: CO_2, water, or dry chemical may be used. Firefighters should be equipped with self-contained breathing apparatus to protect against potentially irritating or sensitizing fumes.

Special Fire Fighting Procedures: None.

Unusual Fire Hazards: None known.

Stability *Unstable*: ☐ *Conditions to Avoid*: Open flame.

Stable: ☒

Incompatibility (Materials to Avoid): None known.

Hazardous Decomposition/By Products: None known.

Hazardous Polymerization: *May Occur*: ☐ *Conditions to Avoid*: Open flame.

Will Not Occur: ☒

SECTION VI - ACCIDENTAL RELEASE MEASURES

Personal Precautions: Minimize dust levels while collecting product (see "Inhalation" health effects). Prevent exposure to dust with NIOSH approved respirators with HEPA filters. Use gloves to minimize skin contact.

Environmental Precautions: DISPOSAL IS TO BE PERFORMED IN COMPLIANCE WITH ALL FEDERAL, STATE/PROVINCIAL AND LOCAL REGULATIONS. Small (household) solutions may be disposed of in sewer. Dry product may be landfilled if permitted by local regulations. Discard empty container in trash. Waste water containing product may be sewered in compliance with all federal and state/provincial regulations, and local ordinances.

Steps To Be Taken in Case Material is Released or Spilled: Review Personal Precautions, FIRE FIGHTING MEASURES, HANDLING AND STORAGE, and EXPOSURE CONTROL, PERSONAL PROTECTION sections before proceeding with clean-up. Use appropriate personal protective equipment during clean-up. Spilled material may be a slip hazard.

For Dry Spills, collect material in an approved container while minimizing dust generation. Vacuum, as appropriate, remaining dust on floor. Recycle or dispose of product, as necessary, in accordance with regulations and other requirements in this section.

Flush small (household) quantities down acceptable sanitary/process sewer. Wipe up small spills with a damp cloth. Dispose of according to local regulations.

SECTION VII - HANDLING AND STORAGE

Precautions To Be Taken in Handling and Storing: Avoid skin contact and breathing product dust. Store in a cool, dry place. Keep product dry to maintain free-flowing granules.

Other Precautions: None.

SECTION VIII - EXPOSURE CONTROLS, PERSONAL PROTECTION

This section only applies to the product when used in an <u>industrial setting</u>.

Respiratory Protection (Specify Type): Industrial use may require a NIOSH approved respirator with HEPA filters.

Ventilation: *Local Exhaust:* Industrial use may require LEV.

Special: None.

Mechanical (General): General dilution ventilation is adequate.

Other: None.

Eye Protection: If a splash of product in solution is likely, chemical goggles may be needed.

Protective Gloves: Protective gloves (rubber, neoprene) should be used for any prolonged direct contact.

Other Protective Equipment: Protective disposable suits may be required under heavy industrial dust conditions.

SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point (°F): N/A

Vapor Pressure (mm Hg): N/A

Vapor Density (Air=1): N/A

Odor Threshold: N/A

Coefficient of Water/Oil Distribution: N/A

Viscosity: N/A

Scooped Density: 561 g/L

Appearance and Odor: White powder with blue speckles. Product is perfumed.

Specific Gravity (H_2O=1): N/A

Percent Volatile by Volume (%): N/A

Evaporation Rate (nBuOAc=1): N/A

Freezing Point: N/A

pH (10% solution): 10.7

Reserve Alkalinity: 5

Solubility in Water: Mostly soluble at 20ºC.

Physical State: Solid granules at 20ºC.

SECTION X - STABILITY AND REACTIVITY

Possible Hazardous Reactions/Conditions: None known.

Conditions to Avoid: Open flame.

Materials to Avoid: None known.

Hazardous Decomposition Products: None known.

Other Recommendations: None.

SECTION XI - TOXICOLOGICAL INFORMATION

LD50 (rats oral): 2.8 - 7.1 g/kg

ED50 approx. 15-119 mg/kg

SECTION XII - ECOLOGICAL INFORMATION

No concerns at relevant environmental concentrations. This product contains an anionic surfactant that has an aquatic 96 hr LC50 of 0.92 ppm (*Pimephales promelas*, OECD 203 test). This is the lowest L/EC50 amongst fish, Daphina and algae. This surfactant is rapidly biodegradable under aerobic and anaerobic conditions (protocols: OECD 301-B and ECETOC 1988, respectively). The levels of biodegradation in these standard test conditions are >70%. Its removal in municipal sewage treatment is expected to be >99% based on standard laboratory test methods. Environmental risk assessment confirms comfortable safety margins because of its high removal and fast biodegradability kinetics.

SECTION XIII - DISPOSAL CONSIDERATIONS

Waste Disposal Method: DISPOSAL IS TO BE PERFORMED IN COMPLIANCE WITH ALL FEDERAL, STATE/PROVINCIAL AND LOCAL REGULATIONS. Dry product from consumer may be landfilled. Industrial dry product may be landfilled if permitted by local regulations or may be incinerated if landfill disposal is not allowed.

Consumer may discard empty container in trash. Industrial producer may discard empty, individual containers in trash. Multiple empty and/or damaged containers should be compacted and landfilled, in accordance with all applicable regulations, or incinerated.

Consumer produced household solutions may be disposed of to sewer. Industrial waste water containing product may be sewered if in compliance with all federal, and state/provincial regulations and local ordinances.

SECTION XIV - TRANSPORT INFORMATION

The finished product is non-hazardous under DOT.

SECTION XV - ADDITIONAL REGULATORY INFORMATION

All intentionally-present components are listed on the US TSCA Inventory.

This product is not subject to warning labeling under California Proposition 65.

No components are affected by Significant New Use Rules (SNURs) under TSCA §5.

Sodium carbonate (497-19-8) is listed on the Canadian WHMIS Ingredient Disclosure List (IDL) as item number 1431, with a threshold of 1%.

All ingredients are CEPA approved for import to Canada by Procter & Gamble. This product has been classified with Hazard Criteria of the Canadian Controlled Products Regulation (CPR) and this MSDS contains all information required by the Canadian Products Regulation.

SECTION XVI - OTHER INFORMATION

****N/A. - Not Applicable** ****N/K. - Not Known**

The submission of this MSDS may be required by law, but this is not an assertion that the substance is hazardous when used in accordance with proper safety practices and normal handling procedures. Data supplied is for use only in connection with occupational safety and health.

The information contained herein has been compiled from sources considered by Procter & Gamble to be dependable and is accurate to the best of the Company's knowledge. The information relates to the specific material designated herein, and does not relate to the use in combination with any other material or any other process. Procter & Gamble assumed no responsibility for injury to the recipient or third persons, for any damage to any property resulting from misuse of the controlled product.