



**Arch  
Chemicals,  
Inc.**

**MATERIAL SAFETY  
DATA SHEET**

FOR ANY EMERGENCY, 24 HOURS / 7 DAYS, CALL:	1-800-654-6911 (OUTSIDE USA: 1-423-780-2970)
FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC®:	1-800-424-9300 (OUTSIDE USA: 1-703-527-3887)
FOR ALL MSDS QUESTIONS & REQUESTS, CALL:	1-800-511-MSDS (OUTSIDE USA: 1-423-780-2347)

**PRODUCT NAME: PULSAR® PLUS ACID CLEANER 50**

**1. PRODUCT AND COMPANY IDENTIFICATION**

<b>Arch Chemicals, Inc.</b> 501 Merritt 7 PO Box 5204 Norwalk, CT 06856-5204	REVISION DATE:	06/16/2008
	SUPERCEDES:	02/22/2006
	MSDS Number:	000000003707
	SYNONYMS:	None
	CHEMICAL FAMILY:	Organic acid
	DESCRIPTION / USE:	Calcium carbonate descaling
	FORMULA:	C3H6O3

**2. HAZARDS IDENTIFICATION**

OSHA Hazard Classification:	<b>Corrosive to eyes, skin and mucous membranes</b>
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Routes of Entry:	Inhalation, skin, eyes, ingestion
Chemical Interactions:	No known or reported interactions.
Medical Conditions Aggravated:	Respiratory diseases including asthma and bronchitis

Human Threshold Response Data

Odor Threshold	Not established for product.
Irritation Threshold	Not established for product.

**Hazardous Materials Identification System / National Fire Protection Association Classifications**

<u>Hazard Ratings :</u>	<u>Health</u>	<u>Flammability</u>	<u>Physical / Instability</u>	<u>PPI / Special hazard.</u>
HMIS	3	0	0	
NFPA	3	0	0	

Immediate (Acute) Health Effects

Inhalation Toxicity:	Inhalation of mist or vapor may cause irritation and/or burns to the mucous membranes of the respiratory tract.
Skin Toxicity:	Dermal exposure can cause severe irritation and/or burns characterized by redness, swelling, and scab formation. Prolonged skin exposure may cause permanent damage.



Eye Toxicity: Severe irritation and/or burns can occur following exposure. Direct contact may cause impairment of vision and corneal damage. Rinsing of the eye should take place immediately.

Ingestion Toxicity: Irritation and/or burns can occur to the entire gastrointestinal tract, including the stomach and intestines, characterized by nausea, vomiting, diarrhea, abdominal pain, bleeding, and/or tissue ulceration.

Acute Target Organ Toxicity: This product is corrosive to all tissues contacted and upon inhalation, may cause irritation to mucous membranes and respiratory tract.

Prolonged (Chronic) Health Effects

Carcinogenicity: This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP or EPA.

Reproductive and Developmental Toxicity: No reproductive or developmental risk to humans is expected from exposure to this product.

Inhalation: Prolonged or repeated exposure may cause more severe irritation and possibly lung damage.

Skin Contact: Repeated dermal exposure may cause tissue destruction due to the corrosive nature of this product.

Ingestion: There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure. The acute corrosivity of this product, makes chronic ingestion of significant amounts unlikely.

Eye Contact: Corneal involvement or visual impairment is expected. Prolonged contact may result in permanent damage.

Sensitization: This material is not known or reported to be a skin or respiratory sensitizer.

Chronic Target Organ Toxicity: There are no known or reported effects from repeated exposure except those secondary to burns.

Supplemental Health Hazard Information : No additional health information available.

**3. COMPOSITION / INFORMATION ON INGREDIENTS**

<u>CAS OR CHEMICAL NAME</u>	<u>CAS #</u>	<u>% RANGE</u>
LACTIC ACID	50-21-5	45 - 55
Water	7732-18-5	45 - 55

**4. FIRST AID MEASURES**

Inhalation: IF INHALED: Remove individual to fresh air. Seek medical attention if breathing becomes difficult or if respiratory irritation develops. If not breathing, give artificial respiration. Call for medical assistance.



Skin Contact: IF ON SKIN: Immediately flush skin with plenty of water for 15 minutes. If clothing comes in contact with the product, the clothing should be removed immediately and laundered before re-use. Seek medical attention if irritation develops.

Eye Contact: IF IN EYES: Immediately flush eyes with plenty of water for at least 15 minutes. Seek medical attention immediately.

Ingestion: IF SWALLOWED: Call a physician immediately. DO NOT induce vomiting unless directed to do so by a physician. Never give anything by mouth to an unconscious person.

Notes to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

## 5. FIRE FIGHTING MEASURES

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Flammability Summary (OSHA): Product is not known to be flammable, combustible, pyrophoric or explosive.

### Flammable Properties

Flash Point: Not applicable

Autoignition Temperature: Not applicable

Fire / Explosion Hazards: Material will not ignite or burn.

Extinguishing Media: Choose extinguishing media suitable for surrounding materials.

Fire Fighting Instructions: In case of fire, use normal fire-fighting equipment and the personal protective equipment recommended in Section 8 to include a NIOSH approved self-contained breathing apparatus.

Hazardous Combustion Products: Carbon monoxide, Carbon dioxide

Upper Flammable / Explosive Limit, % in air: Not applicable

Lower Flammable / Explosive Limit, % in air: Not applicable

## 6. ACCIDENTAL RELEASE MEASURES

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Personal Protection for Emergency Situations: Additional protective clothing must be worn to prevent personal contact with this material. Those items include but are not limited to boots, impervious gloves, hard hat, splash-proof goggles, impervious clothing, i.e., chemically impermeable suit, self-contained breathing apparatus.

### Spill Mitigation Procedures

Air Release: Hazardous concentrations in air may be found in local spill area and immediately downwind. Vapors may be suppressed by the use of water fog. Contain all liquid for treatment and/or disposal as a (potential) hazardous waste.

Water Release: This material is lighter than water. This material is miscible in water. Notify all downstream users of possible contamination. Divert water flow around spill if possible and safe to do so. Contain all liquid for treatment and/or disposal as a (potential) hazardous waste.

Land Release: Create a dike or trench to contain materials. Absorb spill with inert material (e.g., dry sand, clay, earth or commercial absorbent), then place in a chemical waste container. Do not place spill materials back in their original containers. Decontaminate all clothing and the spill area using a detergent and flush with large amounts of water. Contain all liquid for treatment and/or disposal as a (potential) hazardous waste.



Additional Spill Information : Stop source of spill as soon as possible and notify appropriate personnel. Utilize emergency response personal protection equipment prior to the start of any response. Evacuate all non-essential personnel. Dispose of spill residues per guidelines under Section 13, Disposal Consideration.

## 7. HANDLING AND STORAGE

Handling: Do not take internally. Avoid contact with skin, eyes and clothing. Upon contact with skin or eyes, wash off with water. Avoid breathing mist or vapor.

Storage: Store in a cool, dry and well ventilated place. Isolate from incompatible materials.

Incompatible Materials for Storage: Bases Reducing agents oxidizers

Do Not Store At temperatures Above: 65 DEG°C / 150 DEG°F

Empty Container Warning: Empty containers retain hazardous residue, dispose of accordingly.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation: No exposure limits exist for the constituents of this product. Additional ventilation beyond that of general exhaust is not normally required.

### Protective Equipment for Routine Use of Product

Respiratory Protection : Respiratory protection not normally needed. If vapors, mists or aerosols are generated, wear a NIOSH approved respirator.

Respirator Type : A NIOSH approved full-face or half-face respirator in combination with chemical goggles. A NIOSH approved half-face air purifying respirator with organic vapor/acid gas cartridge. Air purifying respirators should not be used in oxygen deficient or IDLH atmospheres or if exposure concentrations exceed ten (10) times the published limit.

Skin Protection : Wear impervious gloves, boots and apron to avoid skin contact. A full impervious suit is recommended if exposure is possible to a large portion of the body.

Eye Protection: Use chemical goggles and a faceshield.

Protective Clothing Type: Neoprene, Natural rubber, Butyl rubber, Nitrile

General Protective Measures: An eye wash and safety shower should be provided in the immediate work area.

### Exposure Limit Data

<u>CHEMICAL NAME</u>	<u>CAS #</u>	<u>Name of Limit</u>	<u>Exposure</u>
No Data Found			

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: liquid  
Form: liquid  
Color: colorless



Odor:	None
Molecular Weight:	(Active ingredient)90.08
Specific Gravity :	1.1200 (@ 25 Deg. C)
pH :	1.0 - 2.0 (@ 25 Deg. C)
Boiling Point:	No data
Freezing Point:	No data
Melting Point:	No data
Density:	9.3300lb/gal
Vapor Pressure:	No data (@ 25 Deg. C)
Vapor Density:	No data
Viscosity:	No data
Fat Solubility:	No data
Solubility in Water:	miscible
Partition coefficient n-octanol/water:	No data
Evaporation Rate:	Approximately1.00
Oxidizing:	No data
Volatiles, % by vol.:	45.000 - 55.000%
VOC Content	No data
HAP Content	No data

## 10. STABILITY AND REACTIVITY

Stability and Reactivity Summary:	Stable under normal conditions. Not sensitive to mechanical shock. Not sensitive to static discharge. Product will not undergo hazardous polymerization.
Conditions to Avoid:	Sparks, open flame, other ignition sources, and elevated temperatures.
Chemical Incompatibility:	Bases, Reducing agents, oxidizers
Hazardous Decomposition Products:	Carbon monoxide, Carbon dioxide
Decomposition Temperature:	No data

## 11. TOXICOLOGICAL INFORMATION

### Component Animal Toxicology

#### Oral LD50 value:

LACTIC ACID                      LD50 = 3,543 mg/kg    Rat

#### Dermal LD50 value:

LACTIC ACID                      LD50 > 2,000 mg/kg    Rabbit

#### Inhalation LC50 value:

LACTIC ACID                      No data

### Product Animal Toxicity

Oral LD50 value:              LD50    Believed to be > 3,543 mg/kg    Rat

Dermal LD50 value:        LD50    > 2,000 mg/kg    Rabbit

Inhalation LC50                No data

#### value:

Skin Irritation:                This material is expected to be corrosive.

Eye Irritation:                This material is expected to be corrosive.



Skin Sensitization:	This material is not known or reported to be a skin or respiratory sensitizer.
Acute Toxicity:	This product is corrosive to all tissues contacted and upon inhalation, may cause irritation to mucous membranes and respiratory tract.
Subchronic / Chronic Toxicity:	There are no known or reported effects from repeated exposure except those secondary to burns.
Reproductive and Developmental Toxicity:	Not known or reported to cause reproductive or developmental toxicity.
Mutagenicity:	This chemical has been tested and was shown to be non-mutagenic.
Carcinogenicity:	This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP or EPA.

## 12. ECOLOGICAL INFORMATION

Overview: No aquatic toxicity data is available for this product.

## 13. DISPOSAL CONSIDERATIONS

**CARE MUST BE TAKEN TO PREVENT ENVIRONMENTAL CONTAMINATION FROM THE USE OF THE MATERIAL. THE USER OF THE MATERIAL HAS THE RESPONSIBILITY TO DISPOSE OF UNUSED MATERIAL, RESIDUES AND CONTAINERS IN COMPLIANCE WITH ALL RELEVANT LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS REGARDING TREATMENT, STORAGE AND DISPOSAL FOR HAZARDOUS AND NONHAZARDOUS WASTES.**

Waste Disposal Summary : If this product becomes a waste, it meets the criteria of a hazardous waste as defined under 40 CFR 261 and would have the following EPA hazardous waste number: D002.

Disposal Methods : As a hazardous solid waste, it must be disposed of in accordance with local, state and federal regulations.

Potential US EPA Waste Codes : D002

## 14. TRANSPORT INFORMATION

Land (US DOT): UN3265 CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Lactic acid) 8 II

Water (IMDG): UN3265 CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S., (Lactic acid) 8 II

Air (IATA): Flash Point: Not applicable  
UN3265 CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S., (Lactic acid) 8 II

Emergency Response Guide Number: ERG # 153



EMS: F-A, S-B

**15. REGULATORY INFORMATION**

**UNITED STATES:**

Toxic Substances Control Act (TSCA): The components of this product are listed on the TSCA Inventory of Existing Chemical Substances.

EPA Pesticide Registration Number: None established

FIFRA Listing of Pesticide Chemicals (40 CFR 180): Not registered in the US under FIFRA.

**Superfund Amendments and Reauthorization Act (SARA) Title III:**

Hazard Categories Sections 311 / 312 (40 CFR 370.2):

Health Immediate (Acute) Health Hazard  
Physical None

**Emergency Planning & Community Right to Know (40 CFR 355, App. A):**

**Extremely Hazardous Substance Section 302 - Threshold Planning Quantity:**

ZUS\_SAR302 TPQ (threshold planning quantity) None established

**Reportable Quantity (49 CFR 172.101, Appendix):**

ZUS\_CERCLA Reportable quantity None established  
ZUS\_SAR302 Reportable quantity None established

**Supplier Notification Requirements (40 CFR 372.45), 313 Reportable Components**

ZUS\_SAR313 De minimis concentration None established

**Clean Air Act Toxic ARP Section 112r:**

CAA 112R None established

**Clean Air Act Socmi:**

HON SOC None established

**Clean Air Act VOC Section 111:**

CAA 111 None established

**Clean Air Act Haz. Air Pollutants Section 112:**

ZUS\_CAAHAP None established

ZUS\_CAAHRP None established

CAA AP None established

**State Right-to-Know Regulations Status of Ingredients**

**Pennsylvania:**

CAS #	COMPONENT NAME
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ZUSPA\_RTK                      None established

**New Jersey:**

CAS #	COMPONENT NAME
ZUSNJ_RTK	None established

**Massachusetts:**

CAS #	COMPONENT NAME
ZUSMA_RTK	None established

**California Proposition 65:**

CAS #	COMPONENT NAME
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ZUSCA\_P65                      None established

**WHMIS Hazard Classification:**

Canada. Canada Hazardous Products Act SOR/88-64  
1988-01-20  
Concentration by Weight: 1 percent by weight  
917  
LACTIC ACID

**16. OTHER INFORMATION**

MSDS REVISION STATUS :    Revised to meet the ANSI standard of 16 sections  
Major References :           Available upon request.

THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200. THE INFORMATION IN THIS MSDS SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. ARCH CHEMICALS BELIEVES THIS INFORMATION TO BE RELIABLE AND UP TO DATE AS OF THE DATE OF PUBLICATION BUT, MAKES NO WARRANTY THAT IT IS. ADDITIONALLY, IF THIS MSDS IS MORE THAN THREE YEARS OLD, YOU SHOULD CONTACT ARCH CHEMICALS MSDS CONTROL AT THE PHONE NUMBER ON THE FRONT PAGE TO MAKE CERTAIN THAT THIS DOCUMENT IS CURRENT. .