

FOR ANY EMERGENCY, 24 HOURS / 7 DAYS, CALL:

FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC®:

FOR ALL SDS QUESTIONS & REQUESTS, CALL:

1-800-654-6911 (OUTSIDE USA: 1-423-780-2970) 1-800-424-9300 (OUTSIDE

USA: 1-703-527-3887) 1-800-511-MSDS (OUTSIDE

USA: 1-423-780-2347)

PRODUCT NAME: Pulsar Plus Calcium Hypochlorite Briquettes

EPA Registration Number: 1258-1179

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Arch Chemicals, Inc.

1200 Bluegrass Lakes Pkwy Alpharetta, GA 30004

Business Telephone (678) 624-5800

REVISION DATE: SUPERCEDES:

MSDS Number: SYNONYMS:

CHEMICAL FAMILY: DESCRIPTION / USE

92/05/2016 06/02/2015

000000022378

none Hypochlorite

Sanitizer and OxidizerWater treatment

chemical

Not Applicable/Mixture FORMULA:

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Category 2 Oxidizing solids

Category 4 Acute toxicity (Oral)

Category 1B Skin corrosion

Category 1 Serious eye damage

Category 3 Acute toxicity (Inhalation)

Specific target organ toxicity -

single exposure

Category 3 (Respiratory system)

GHS label elements

Hazard pictograms









Danger Signal word

Pulsar Plus Calcium Hypochlorite Briquettes

REVISION DATE: 02/05/2016

Page 1 of 13



Hazard statements

H272 May intensify fire; oxidizer.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H331 Toxic if inhaled.

H335 May cause respiratory irritation.

Precautionary statements

Prevention:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P220 Keep/Store away from clothing/ combustible materials. P221 Take any precaution to avoid mixing with combustibles.

P260 Do not breathe vapours.

P264 Wash hands thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

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/shower.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

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

P310 Immediately call a POISON CENTER/doctor.

P363 Wash contaminated clothing before reuse.

P370 + P378 In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.

Storage: P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local regulation.

Other hazards None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS OR CHEMICAL NAME CALCIUM HYPOCHLORITE CAS# 7778-54-3 % RANGE 60 - 80

Pulsar Plus Calcium Hypochlorite Briquettes REVISION DATE: 02/05/2016

Page 2 of 13



SODIUM CHLORIDE	7647-14-5	10 = 20
CALCIUM CHLORATE	10137-74-3	0 - 5
CALCIUM CHLORIDE	10043-52-4	0 - 5
CALCIUM HYDROXIDE	1305-62-0	0 - 4
CALCIUM CARBONATE	471-34-1	0 - 4
1,2,4-BUTANETRICARBOXYLIC ACID, 2-	40372-66-5	0.2 - 0.8
PHOSPHONO-, SODIUM SALT Water	7732-18-5	4.0 - 8.5

SECTION 4. FIRST AID MEASURES

Call a poison control center or doctor for treatment advice. For 24-hour General Advice:

emergency medical assistance, call Arch Chemical Emergency Action Network at 1-800-654-6911. Have the product container or label with you when calling a

poison control center or doctor, or going for treatment.

IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an Inhalation:

ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.

Call a poison control center or doctor for further treatment advice.

IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin Skin Contact:

immediately with plenty of water for 15-20 minutes. Call a poison control center or

doctor for treatment advice.

IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 Eye Contact:

minutes. Remove contact lenses, if present, after the first 5 minutes, then

continue rinsing eye. Call a poison control center or doctor for treatment advice. IF SWALLOWED: Call a poison control center or doctor immediately for treatment

advice. Have person sip a glass of water if able to swallow. Do not induce

vomiting unless told to do so by a poison control center or doctor. Do not give

anything by mouth to an unconscious person.

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

SECTION 5. FIREFIGHTING MEASURES

Pulsar Plus Calcium Hypochlorite Briquettes

Ingestion:

REVISION DATE: 02/05/2016

Page 3 of 13

Lonza

SAFETY DATA SHEET

Flammability Summary (OSHA):

This product is chemically reactive with many substances. Any contamination of the product with other substances by spill or otherwise may result in a chemical reaction and fire., This product is a strong oxidizer which is capable of intensifying a fire once started., Product is not known to be flammable, combustible or pyrophoric.

Flammable Properties

Flash Point:

Autoignition Temperature:

Extinguishing Media:

Not applicable Not applicable

Water only. Do not use dry extinguishers containing ammonium

compounds.

Fire Fighting Instructions:

Use water to cool containers exposed to fire. See Section 6 for

protective equipment for fire fighting. Not applicable

Upper Flammable / Explosive Limit,

% in air:

Lower Flammable / Explosive Limit,

% in air:

Not applicable

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Protection for Emergency Situations:

Response to a large quantity spill (100 pounds or greater) or when dusting or decomposition gas exposure could occur requires the use of a positive pressure full face supplied air repirator or self contained breathing apparatus (SCBA), chemical resistant gloves, coveralls and boots. In case of fire, this personal protective equipment should be used in addition to normal fire fighter equipment.

Spill Mitigation Procedures

Air Release:

Vapors may be suppressed by the use of water fog. All water utilized to assist in fume suppression, decontamination or fire suppression may be contaminated and must be contained before disposal and/or treatment.

Water Release:

This product is heavier than water. This material is soluble in water. Monitor all exit water for available chlorine and pH. Advise local

authorities of any contaminated water release.

I and Release:

Contact 1-800-654-6911 immediately. DANGER: All spills of this product should be treated as contaminated. Contaminated product may initiate a chemical reaction that may spontaneously ignite any combustible material present, resulting in a fire of great intensity. In case of a spill, separate all spilled product from packaging, debris and other material. Using a clean broom or shovel, place all spilled product into plastic bags, and place those bags into a clean, dry disposal container, properly marked and labeled. Disposal containers made of plastic or metal are recommended. Do not seal disposal containers tightly. Immediately remove all product in disposal containers to an isolated area outdoors. Place all damaged packaging material in a disposal container of water to assure decontamination (i.e. removal of all product) before disposal. Place all undamaged packaging in a clean, dry container properly marked and labeled. Call for disposal procedures.

REVISION DATE: 02/05/2016

Page 4 of 13

Lonza

SAFETY DATA SHEET

Additional Spill Information:

Hazardous concentrations in air may be found in local spill area and immediately downwind. Remove all sources of ignition. Stop source of spill as soon as possible and notify appropriate personnel. Dispose of spill residues per guidelines under Section 13, Disposal Consideration. This material may be neutralized for disposal, you are requested to contact Arch Chemicals at 1-800-654-6911 before beginning any such procedure. FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC: 1-800-424-9300 REPORTABLE QUANTITY: 10 lbs. (as calcium hypochlorite) per 40 CFR 302.4.

SECTION 7. HANDLING AND STORAGE

Avoid inhalation of dust and fumes. Do not take internally. Avoid Handling:

contact with skin, eyes and clothing. Upon contact with skin or eyes, wash off with water. Remove contaminated clothing and wash

before reuse.

Keep product tightly sealed in original containers. Store product in a Storage:

cool, dry, well-ventilated area. Store away from combustible or flammable products. Keep product packaging clean and free of all contamination, including, e.g. other pool treatment products, acids, organic materials, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers,

all corrosive liquids, flammable or combustible materials, etc. Do not store product where the average daily temperature exceeds

95° F. Storage above this temperature may result in rapid

decomposition, evolution of chlorine gas and heat sufficient to ignite combustible products. Shelf life (that is, the period of time before the product goes below stated label strength) is determined by storage time and temperatures. Store in a cool, dry and well ventilated area. Prolonged storage at elevated temperatures will significantly shorten the shelf life. Storage in a climate controlled storage area or building is recommended in those areas where extremes of high temperature

occur.

Do not allow product to come in contact with other materials, Incompatible Materials for Storage:

including e.g. other pool treatment products, acids, organic materials, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, all corrosive liquids, flammable or combustible materials, etc. A chemical reaction with such substances can cause a fire of great

intensity.

Do Not Store At temperatures

Shelf Life Limitations:

Above:

Average daily temperature of 35° C / 95° F. Storage above this temperature may result in rapid decomposition, evolution of chlorine

gas and heat sufficient to ignite combustible products.

REVISION DATE: 02/05/2016

Page 5 of 13



SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation:

Local exhaust ventilation or other engineering controls are normally required

when handling or using this product to keep airborne exposures below the

TLV, PEL or other recommended exposure limit.

Protective Equipment for Routine Use of Product

Respiratory Protection:

Wear a NIOSH approved respirator if levels above the exposure limits are

Respirator Type:

A NIOSH approved full-face air purifying respirator equipped with

combination chlorine/P100 cartridges. 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 to avoid skin contact. A full impervious suit is

recommended if exposure is possible to a large portion of the body. A safety

shower should be provided in the immediate work area.

Eve Protection:

Use chemical goggles. Emergency eyewash should be provided in the

immediate work area.

Protective Clothing Type:

Neoprene, Nitrile, Natural rubber (This includes: gloves, boots, apron,

protective suit)

Components with workplace control parameters

		Besis (Undate)
Value		Basis (Update)
TWA	1 mg/m3	ARCH OEL*
Conc	37 - 48 mg/m3	NIOSH/GUIDE IDLH
TWA	5 mg/m3	ACGIH (02 2014)
TWA	5 mg/m3	AOON 1 (02 20)
	TWA	TWA 1 mg/m3 Conc 37 - 48 mg/m3

ARCH OEL: Arch Recommended Occupational Exposure Guideline.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:

solid

Form

tablet white

Color:

Chlorine-like

Odor: Molecular Weight:

143,00 g/mol

pH:

10.4 - 10.8 (1% solution in neutral, distilled water) (@ 25 Deg. C) Not applicable

Boiling Point: Freezing Point:

Not applicable

Density:

1.9g/cc

Vapor Pressure:

(@ 25 Deg. C) Not applicable

Vapor Density:

Not applicable

Pulsar Plus Calcium Hypochlorite Briquettes

REVISION DATE: 02/05/2016

Page 6 of 13



Lonza

Viscosity: Fat Solubility:

Solubility in Water:

Not applicable no data available

18 % (@ 25 Deg. C) Product also contains calcium hydroxide and

calcium carbonate which will leave a residue.

Partition coefficient n-

octanol/water: Evaporation Rate:

Oxidizing: Volatiles, % by vol.:

VOC Content **HAP Content**

Not applicable

Not applicable

Oxidizing Not applicable Not applicable Not applicable

SECTION 10. STABILITY AND REACTIVITY

Stability and Reactivity Summary:

Conditions to Avoid:

Chemical Incompatibility:

Product is not sensitive to mechanical shock or impact. Product is not sensitive to electrical static discharge. Product will not undergo hazardous polymerization. Product is an NFPA Class 3 oxidizer which can cause a severe increase in fire intensity. Not pyrophoric. Not an organic peroxide. If subjected to excessive temperatures, the product may undergo rapid decomposition, evolution of chlorine gas, and heat sufficient to ignite combustible substances. If product is exposed to small amounts of water, it can react violently to produce heat and toxic gases and spatter. Use copious amounts of water for fires involving this product. Do not store next to heat source, in direct sunlight, or elevated storage temperature. Do not store where the daily average

temperature exceeds 95 °F. Prevent ingress of humidity and moisture into container or package. Always close the lid. This product is chemically reactive with many substances, including, e.g., other pool treatment products, acids, organics, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, corrosive flammable or combustible materials. Do not allow product to

contact any foreign matter, including other water treatment products. Contamination or improper use may cause a fire of great intensity, explosion or the release of toxic gases. If product is exposed to small amounts of water, it can react violently to

produce heat and toxic gases and spatter.

Hazardous Decomposition Products:

Decomposition Temperature:

Chlorine

170 - 180 °C - , 338 - 356 °F-

SECTION 11. TOXICOLOGICAL INFORMATION

Component Animal Toxicology

Oral LD50 value:

CALCIUM

LD50 (65% calcium hypochlorite) 850 mg/kg

HYPOCHLORITE

LD50 = 3,000 mg/kgSODIUM CHLORIDE

Pulsar Plus Calcium Hypochlorite Briquettes

REVISION DATE: 02/05/2016

Page 7 of 13



LD50 = 1,000 mg/kgRat CALCIUM CHLORIDE LD50 = 7,340 mg/kgRat CALCIUM HYDROXIDE

Component Animal Toxicology

Dermal LD50 value:

CALCIUM

LD50 (65% calcium hypochlorite) > 2,000 mg/kg Rabbit

HYPOCHLORITE

SODIUM CHLORIDE **CALCIUM CHLORIDE** LD50 > 10,000 mg/kg Rabbit

LD50 = 2,630 mg/kg

no data available CALCIUM HYDROXIDE

Component Animal Toxicology

Inhalation LC50 value: CALCIUM

Inhalation LC50 1 h (65% calcium hypochlorite), (Nose Only) = 2.04 mg/l

HYPOCHLORITE

Inhalation LC50 4 h (65% calcium hypochlorite), (Nose Only) = 0.51 mg/l

Rat

SODIUM CHLORIDE

42 mg/l Rat Inhalation LC50 1 h >

CALCIUM CHLORIDE

no data available

CALCIUM HYDROXIDE

no data available

Product Animal Toxicity

Oral LD50 value:

approximately 800 mg/kg LD50

Dermal LD50 value:

> 2.000 mg/kg Rabbit LD50

Inhalation LC50 <u>value</u>:

2.04 mg/l Rat Inhalation LC50 4 h Inhalation LC50 1.00 h (Nose Only) > 0.51 mg/l Rat Inhalation LC50 1 h (Nose Only) > 2.04 mg/l (Nose Only) >

Rat Inhalation LC50 4 h (Nose Only) > 0.51 mg/l

Skin Irritation:

DRY MATERIAL CAUSES MODERATE SKIN IRRITATION., WET MATERIAL

CAUSES SKIN BURNS.

Eve Irritation:

Corrosive to eyes.

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. The dry material is irritating to

the skin. However when wet, it will produce burns to the skin.

Subchronic / Chronic

Toxicity:

There are no known or reported effects from repeated exposure except those

secondary to burns.

Reproductive and Developmental Toxicity: Calcium hypochlorite has been tested for teratogenicity in laboratory animals. Results of this study have shown that calcium hypochlorite is not a

teratogen.

CALCIUM CHLORIDE

Not known or reported to cause reproductive or

Pulsar Plus Calcium Hypochlorite Briquettes

REVISION DATE: 02/05/2016

Page 8 of 13



developmental toxicity.

Mutagenicity:

Calcium hypochlorite has been tested in the Dominant lethal assay in male mice, and it did not induce a dominant lethal response. Calcium hypochlorite has been reported to produce mutagenic activity in two in vitro assays. It has, however, been shown to lack the capability to produce mutations in animals based on results from the micronucleus assay. In vitro assays frequently are inappropriate to judge the mutagenic potential of bactericidal chemicals due to a high degree of cellular toxicity. The concentration which produces mutations in these in vitro assays is significantly greater than the concentrations used for disinfection. Based on high cellular toxicity in in vitro assays and the lack of mutagenicity in animals, the risk of genetic damage to humans is judged not significant.

CALCIUM CHLORIDE

This product was determined to be non-mutagenic in the Ames assay. It was also shown to be nonclastogenic in the chromosomal aberration test.

Carcinogenicity:

This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP or EPA. One hundred mice were exposed dermally 3 times a week for 18 months to a solution of calcium hypochlorite. Histopathological examination failed to show an increased incidence of tumors. IARC (International Agency for Research on Cancer) reviewed studies conducted with several hypochlorite salts. IARC has classified hypochlorite salts as having inadequate evidence for carcinogenicity to humans and animals. IARC therefore considers hypochlorite salts to be not classifiable as to their carcinogenicity to humans (Group 3 Substance).

CALCIUM CHLORIDE

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

SECTION 12. ECOLOGICAL INFORMATION

Overview:

Highly toxic to fish and other aquatic organisms.

Ecological Toxicity Values for: CALCIUM HYPOCHLORITE

Bluegill - (nominal, static). 96 h LC50 0.088 mg/l neri), - (nominal, static). 96 h LC50 0.16 mg/l

Rainbow trout (Salmo gairdneri), - (nominal, static). 96 n LC50 0.16 mg/l
Daphnia magna, - (nominal, static). 48 h LC50 0.11 mg/l

Bobwhite quail - Dietary LC50 > 5,000 ppm Dietary LC50 > 5,000 ppm

Ecological Toxicity Values for: CALCIUM CHLORIDE

Bluegill - (nominal, static). 96 h LC50 = 10,650 mg/l

Mosquito fish - (nominal, static). 96 h LC50 = 13,400 mg/l - (nominal, static). 96 h LC50 = 4,630 mg/l

minnow)

Pulsar Plus Calcium Hypochlorite Briquettes

REVISION DATE: 02/05/2016

Page 9 of 13





Daphnia magna, - (nominal, static). 48 h LC50= 2,770 mg/l

(nominal, static). 48 h LC50= 1,830 mg/l Ceriodaphnia dubia

(nominal, static). 5 day LC50 = 3,130 mg/l Nitzschia linearis (diatom) -

SECTION 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.

If this product becomes a waste, it meets the criteria of a hazardous Waste Disposal Summary:

waste as defined under 40 CFR 261 and would have the following EPA hazardous waste number: D001.If this product becomes a waste, it will be a hazardous waste which is subject to the Land Disposal restrictions under 40 CFR 268 and must be managed accordingly. As a hazardous solid waste, it must be disposed of in

accordance with local, state and federal regulations.

As a hazardous solid waste it should be disposed of in accordance Disposal Methods:

with local, state and federal regulations.

D001 Potential US EPA Waste Codes:

SECTION 14. TRANSPORT INFORMATION

DOT

: 1748 UN number

: Calcium hypochlorite mixtures dry Description of the goods

: 5.1 Class : 111 Packing group : 5.1 Labels 140

Emergency Response Guidebook Number

TDG

: 1748 UN number

: CALCIUM HYPOCHLORITE MIXTURE, DRY Description of the goods

Page 10 of 13

: 5.1 Class : 11 Packing group 5.1 Labels

Pulsar Plus Calcium Hypochlorite Briquettes

REVISION DATE: 02/05/2016



IATA

UN number : 1748

Description of the goods : Calcium hypochlorite mixture, dry

Class : 5.1
Packing group : III
Labels : 5.1
Packing instruction (cargo : 563

aircraft)

Packing instruction : 559

(passenger aircraft)

Packing instruction : Y546

(passenger aircraft)

IMDG-CODE

UN number : 1748

Description of the goods : CALCIUM HYPOCHLORITE MIXTURE, DRY

Class : 5.1
Packing group : III
Labels : 5.1
EmS Number 1 : F-H
EmS Number 2 : S-Q

Marine pollutant : yes

SECTION 15. REGULATORY INFORMATION

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals.

Signal word : DANGER!

Hazard statements : Causes substantial but temporary eye injury.

Page 11 of 13

Corrosive. Causes skin burns.

Corrosive. Causes irreversible eye damage.

This pesticide is toxic to fish.

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Calcium hypochlorite	7778-54-3	10	13

SARA 302

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Pulsar Plus Calcium Hypochlorite Briquettes

REVISION DATE: 02/05/2016



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.

US State Regulations

Calcium hypochlorite	7778-54-3
Calcium chlorate	10137-74-3
Calcium carbonate	471-34-1
Calcium dihydroxide	1305-62-0

Pennsylvania Right To Know

Calcium hypochlorite	7778-54-3
Sodium chloride	7647-14-5
Calcium chlorate Calcium chloride Calcium carbonate Calcium dihydroxide	10137-74-3 10043-52-4 471-34-1 1305-62-0

New Jersey Right To Know

Calcium hypochlorite Sodium chloride Calcium chlorate Calcium chloride Calcium carbonate Calcium dihydroxide	7778-54-3 7647-14-5 10137-74-3 10043-52-4 471-34-1 1305-62-0
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California Prop 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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

TSCA

: This is an EPA registered pesticide.

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

SECTION 16. OTHER INFORMATION

SECTIONS REVISED:

1, 14

Major References

Available upon request.

Pulsar Plus Calcium Hypochlorite Briquettes

REVISION DATE: 02/05/2016

Page 12 of 13





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.

REVISION DATE: 02/05/2016

Page 13 of 13