

* * M A T E R I A L S A F E T Y D A T A S H E E T * *

P C S N I T R O G E N

MSDS # 5

Emergency Contact: CHEMTREC 1-800-424-9300

A. GENERAL INFORMATION

Trade Name (common name or synonym) POLY-N (R)		C.A.S. No. 68333-79-9	
Chemical Name AMMONIUM POLYPHOSPHATE SOLUTION			
Formula (NH ₄)(N+2)-MHMPNO ₃ N+1 WHERE M = 0 TO N + 2, N = 1		Molecular Wt. VARIES	
Address (No., Street, City, State and Zip Code) PCS Nitrogen, Inc. 3175 Lenox Park Blvd, Suite 400 Memphis, TN 38115-4256			
Contact MEMPHIS CORPORATE	Phone Number (800)524-0132	Issue Date MAY 1978	Revised Date 04/15/96

B. FIRST AID

EYES:	FLUSH EYES IMMEDIATELY AND THOROUGHLY WITH WATER FOR AT LEAST 15 MINUTES. IF IRRITATION PERSISTS, GET PROMPT MEDICAL ATTENTION.
SKIN:	FLUSH SKIN IMMEDIATELY AND THOROUGHLY WITH WATER. IF IRRITATION PERSISTS, GET PROMPT MEDICAL ATTENTION.
INHALATION:	GENERALLY NOT CONSIDERED AN INHALATION HAZARD.
INGESTION:	IF CONSCIOUS, IMMEDIATELY GIVE LARGE QUANTITIES OF WATER AND INDUCE VOMITING. CONSULT A PHYSICIAN PROMPTLY.

* * * * NOTICE * * * *

Seller warrants that this product conforms to the specifications stated herein. Buyer assumes all risks associated with the possession, use, mixing, blending, treatment, storage, disposal, transportation and handling of the product, whether alone or in combination with other substances. SELLER MAKES NO OTHER WARRANTY OF ANY KIND WHATEVER, EXPRESS OR IMPLIED, AND ALL OTHER WARRANTIES, INCLUDING WARRANTIES OF QUALITY MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE DISCLAIMED. Seller's liability is limited to the product price.

In the event of any medical emergency involving this Product, seek professional assistance or contact a Poison Control Center immediately.

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C. HAZARDS INFORMATION - Health

Inhalation

IF MISTY CONDITION PREVAILS, MAY IRRITATE. RATS: ONE-HOUR EXPOSURE TO 19.6 MG/L WAS NON-LETHAL.

Ingestion

LARGE DOSES OF AMMONIUM SALTS MAY GIVE DIARRHEA AND DIURESIS. LOW ORAL TOXICITY. LD50 (RATS): MALE - 5,000 MG/KG OF BODY WEIGHT. FEMALE - 3,000 MG/KG OF BODY WEIGHT.

Skin

LOW SKIN IRRITATION POTENTIAL. (PH 5.7 TO 6.2)
RABBITS: DERMAL EXPOSURE IS NON-LETHAL.

Eyes

LOW EYE IRRITATION POTENTIAL. (PH 5.7 TO 6.2)

Permissible Concentration

Air: NONE ESTABLISHED

Biological: NONE ESTABLISHED

Unusual chronic toxicity

NONE REPORTED; NONE SUSPECTED.

C. HAZARDS INFORMATION - Fire and Protection

Flash Point:	Auto Ignit.	Flammable Limits in air (% by vol)
Not Applicab.	Temperature:	Upper: Not Applicable
[] Open Cup	NOT APPLICABLE	Lower: Not Applicable
[] Closed Cup		

Unusual fire and explosion hazards

WHEN HEATED, IT MAY GIVE OFF AMMONIA FUMES. (THIS MATERIAL IS A FIRE RETARDANT.)

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D. PRECAUTIONS/PROCEDURES

Fire extinguishing agents RECOMMENDED
POLY-N SOLUTION IS ESSENTIALLY NONFLAMMABLE.
IF INVOLVED IN A FIRE, USE WATER.

Fire extinguishing agents to AVOID
ALL STANDARD AGENTS ARE ACCEPTABLE (WATER, DRY CHEMICAL, CARBON DIOXIDE,
HALON AND FOAM).

Special fire fighting precautions
DUE TO POSSIBLE EVOLUTION OF AMMONIA, WEAR SELF-CONTAINED BREATHING
APPARATUS APPROVED BY NIOSH. USE WATER SPRAY TO KEEP CONTAINERS COOL.

Ventilation

UNLESS HEATED TO EVOLVE AMMONIA OR MISTED BY HEAT, AGITATION, OR SPRAYING,
NATURAL VENTILATION SHOULD BE ADEQUATE.

Normal Handling

AVOID BREATHING MIST, IF ANY SHOULD BE FORMED. MINIMIZE CONTACT OF LIQUID
WITH EYE, SKIN, AND CLOTHING. USE GOOD PERSONAL HYGIENE AND HOUSEKEEPING.

Storage

AVOID USING CONTAINERS, PIPES AND FITTINGS MADE OF ZINC-CLAD OR
COPPER-BEARING ALLOYS. STORAGE IN OPEN CONTAINERS MAY RESULT IN FORMATION
OF AN AMMONIUM POLYPHOSPHATE SOLID ON WALLS. SEE SECTION K.

Spill or Leak

CONTAIN SPILLS AND MAXIMIZE RECOVERY. MOP UP OR PUMP UP PROMPTLY INTO
METAL OR PLASTIC DRUM. (CAUTION SHOULD BE EXERCISED IN THE AREA OF
SPILLED MATERIAL SINCE POLY-N SOLUTION CAN CAUSE A SLIPPERY CONDITION.)

Special Precautions/Procedures/Label Instructions
NONE KNOWN.

**** MATERIAL SAFETY DATA SHEET ****

PCS NITROGEN

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E. PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection

RESPIRATORS ARE NOT REQUIRED UNDER NORMALLY VENTILATED CONDITIONS. IF HEATED TO EVOLVE AMMONIA, USE APPROPRIATE PROTECTION. IF MISTED BY HEAT, AGITATION, OR SPRAY, USE A MIST RESPIRATOR APPROVED BY NIOSH.

Eyes and face

SAFETY GLASSES ARE RECOMMENDED.

Hands, arms, and body

RUBBER-COATED GLOVES AND CLOTHING WHICH MINIMIZE SKIN EXPOSURE ARE RECOMMENDED IF THERE IS PROLONGED OR REPEATED EXPOSURE TO SKIN OF LIQUID.

Other clothing and equipment

NOT GENERALLY REQUIRED.

F. PHYSICAL DATA

Material is (at normal conditions): Appearance and Odor

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	GREEN ODORLESS LIQUID.
LIQUID	SOLID	GAS	

Boiling Point: SEE SECTION K.

Melting Point: SEE SALT OUT TEMP.*

Specific Gravity (H2O=1): SEE SECTION K.

Vapor Density (Air=1) : NOT APPLICABLE - H2O VAPOR ONLY @ AMBIENT.

Solubility in Water (% by wt.) 100%	pH 5.7 - 6.2 TYPICAL 5.9	Vapor Pressure <1 @ 37.8 DEG C
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Evaporation Rate [] []	%Volatiles by volume (at 20 C) NOT APPLICABLE (H2O VAPOR ONLY)
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(Butyl Acetate=1) (Ether = 1)
Time:NOT APPLICABLE

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G. REACTIVITY DATA

Stability [] [X] Unstable Stable	Conditions to Avoid WHEN HEATED, FOR EXAMPLE IN A FIRE, GIVES OFF AMMONIA GAS.
Incompatibility (materials to avoid) ZINC-CLAD AND COPPER-BEARING ALLOYS. WATER-REACTIVE MATERIALS.	
Hazardous decomposition products AMMONIA.	
Hazard polymerization [] [X] May Occur Will Not Occur	Conditions to Avoid NOT APPLICABLE.

H. HAZARDOUS INGREDIENTS (MIXTURES ONLY)

Material or Composition/C.A.S. #	Wt. %	Hazard Data (see Sect. K)
NOT APPLICABLE.		

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I. ENVIRONMENTAL

Degradability/aquatic toxicity

SINCE POLY-N SOLUTION IS A FERTILIZER, IT MAY PROMOTE EUTROPHICATION IN WATERWAYS. USE AND DISPOSAL OF POLY-N SOLUTION EMPLOYING PROPER ENVIRONMENTAL CONTROLS SHOULD NOT CAUSE SIGNIFICANT ENVIRONMENTAL IMPACT.

EPA hazardous substance?	[]	[X]	If so, reportable quantity SEE SECTION "K"	40 CFR 116-117
	YES	NO		

Waste disposal methods (disposer must comply with disposal & discharge laws)

DISPOSAL OF POLY-N FERTILIZER MAY BE SUBJECT TO FEDERAL, STATE AND LOCAL REGULATIONS. USERS OF THIS PRODUCT SHOULD REVIEW THEIR OPERATIONS IN TERMS OF APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS, THEN CONSULT WITH APPROPRIATE REGULATORY AGENCIES BEFORE DISCHARGING OR DISPOSING OF WASTE MATERIAL.

J. REFERENCES

Is this a listed material?	YES	NO	YES	NO
NTP (List)	[]	[X]	OSHA (Carcinogen)	[] [X]
IARC (Monographs)	[]	[X]	ACGIH (TLV List)	[] [X]

Permissible concentration references

NO TLV (THRESHOLD LIMIT VALUE) ESTABLISHED BY ACGIH.

Regulatory Standards:	D.O.T. Classification NOT REGULATED	49 CFR
NONE.		

General

HEALTH PROPERTIES OF AMMONIUM SALTS AND OF PHOSPHATES:
GOSSELIN, ET AL., "CLINICAL TOXICOLOGY OF COMMERCIAL PRODUCTS", 4TH ED., 1976, WILLIAMS AND WILKINS, BALTIMORE.
DEICHMAN, N.B. AND H.W. GERARDE, "TOXICOLOGY OF DRUGS AND CHEMICALS", 1969, PG. 61, ACADEMIC PRESS, NEW YORK.

*** MATERIAL SAFETY DATA SHEET ***
ARCADIAN CORPORATION

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Emergency Contact: CHEMTREC 1-800-424-9300

K. ADDITIONAL INFORMATION

ALL ENTITIES MUST PROVIDE THE INFORMATION CONTAINED IN THIS MSDS TO YOUR EMPLOYEES, AGENTS, CONTRACTORS, DISTRIBUTORS, AND CUSTOMERS WHO HANDLE, USE, PURCHASE OR OTHERWISE MAY BE EXPOSED.

DISTRIBUTORS OF THIS PRODUCT TO CUSTOMERS IN MANUFACTURING STANDARD INDUSTRIAL CODES (SIC) 20 THROUGH 39 MUST REPRODUCE THIS MSDS AND SEND IT TO THESE CUSTOMERS TO MAKE THEM AWARE OF THE POTENTIAL REPORTING REQUIREMENTS UNDER 40 CFR PART 372.

SECTION A -

AGRICULTURAL DESCRIPTION	10-34-0 TYPE	11-37-0 TYP
AMMONIACAL NITROGEN (N)	10.0%	11.0%
PHOSPHATE AS P2O5	34.0%	37.0%
SULFATE (SO4)	1.5%	1.8%
SEQUESTERED METALS IRON (Fe)	0.14%	0.15%
ALUMINUM & MAGNESIUM (Al & Mg)	0.5%	0.5%
WATER (H2O)	41.0%	36.0

SECTION D - STORAGE - PROTECT FROM PHYSICAL DAMAGE. ALUMINUM TANKS NOT RECOMMENDED BECAUSE OF POSSIBLE PITTING.

SECTION F - SPECIFIC GRAVITY: 1.388 (10-34-0 TYPE) 60 DEG./60 DEG. F
 1.425 (11-37-0 TYPE) 60 DEG./60 DEG. F

SALT OUT TEMP.: 10 DEG. F MAX. (-12 DEG. C) TYPE 10-34-0
 25 DEG. F MAX. (-4 DEG. C) TYPE 11-37-0

BOILING POINT: 221 DEG. F (TYPE 10-34-0)
 225 DEG. G (TYPE 11-37-0)

VISCOSITY: 36 CPS AT 60 DEG. F (TYPE 10-34-0)
 73 CPS AT 60 DEG. F (TYPE 11-37-0)

SECTION I - TITLE III SARA

POLY-N/COMPONENTS/IMPURITIES LISTED IN: (REQUIRING REPORTING)

40 CFR PART 355 - EXTREMELY HAZARDOUS SUBSTANCES - NONE
 40 CFR PART 370 HAZARDOUS CHEMICAL REPORTING - APPLICABLE

IMMEDIATE HEALTH	DELAYED HEALTH	FIRE	SUDDEN PRESSURE RELEASE	REACTIVE
X				

40 CFR PART 372 - TOXIC CHEMICALS - AMMONIUM SULFATE

POLY-N, AMMONIUM POLYPHOSPHATE SOLUTION CONTAINS AMMONIUM SULFATE SOLUTION WHICH IS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986, 40 CFR PART 372.

LISTED CHEMICAL	CAS NO.	CONC. BY WEIGHT
AMMONIUM SULFATE SOLUTION	7783-20-2	TYPE 10-34-0 11-37-0 2.1 2.5

SPILL REPORTING: THERE IS NO RQ REPORTING REQUIREMENT FOR POLY-N BUT LOCAL AND STATE REQUIREMENTS MAY VARY. CHECK LOCAL AND STATE LAWS.

NOTE: (R) POLY-N IS A REGISTERED TRADEMARK OF ARCADIAN CORPORATION; MEMPHIS, TENNESSEE 38138.

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K. ADDITIONAL INFORMATION (Continued)

NFPA

HEALTH - 1

FIRE - 0

INSTABILITY - 0

SPECIAL PRECAUTION - NONE

MSDS: PREPARED BY RANDY FERRARA (901) 758-5254

REVISED BY RICK VOSS (901) 758-5255

ARCADIAN PART NUMBERS:

POLY10, POLY11, POLY12, POLYOS, POLY11-55 GAL.