Synonyms:
None I Progrant Lane
Company Identification: Fisher Scientific
I Respent Lane
Fairlawn, NJ 07410
For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300 Benedicts Qualitative Solution 02564 Appearance: Clear, blue liquid. Target Organs: Kidneys, liver. Potential Health Effects MSDS Name: Benedicts Qualitative Solution Catalog Numbers: \$71366-R protective gear.

Extinguishing Media:
For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam.

Autoignition Temperature Not applicable.
Flash Point: Not available. Eyes:
Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids.
Get medical aid immediately. Causes skin irritation.

Ingestion:
May cause severe digestive tract irritation with abdominal pain.

Nausea, vomiting and diarrhea.

May cause hemorrhaging of the digestive tract.

Inhalation:
May cause respiratory tract irritation.

May cause respiratory tract irritation of the nasal septum if inhaled in excessive quantities. 7732-18-5 Water 6132-04-3 Sodium Citrate Dihydrate 5968-11-6 Sodium Carbonate Monohydrate General Information:
As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full Get medical aid.

Notes to Physician:
Treat symptomatically and supportively.

No specific antidote exists. 7758-99-8 Cupric sulfate pentahydrate INDEX: **** SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ** Remove from exposure to fresh air immediately. If not breathing give artificial respiration. If breathing is difficult, give oxygen Get medical aid. If victim is conscious and alert, give 2-4 cupfuls of milk or water Get medical aid immediately. of acute inhalation and ingestion.
May cause liver and kidney damage.
May cause reproductive and fetal effects. Get medical aid. Immediately flush skin with plenty of soap and water for at least 15 minutes white removing contaminated clothing and shoes. **** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS **** Chronic inhalation and ingestion may cause effects similar to those of acute inhalation and ingestion. Exposure to particulates or solution may cause conjunctivitis ulceration, and corneal abnormalities. G60114196 01/12/96 **** SECTION 3 - HAZARDS IDENTIFICATION **** **** SECTION 5 - FIRE FIGHTING MEASURES *** **** SECTION 4 - FIRST AID MEASURES **** EMERGENCY OVERVIEW Chemical Name CAT NO: 571369 ACCT: 419149001 73.5 5 % unlisted unlisted unlisted Einecs# unlisted PO NBR: 81449 PAGE: 1



Cupric sulfate pent none listed ahydrate Sodium Citrate Dihy none listed drate Sodium Carbonate Mo none listed nohydrate Handling:
Wash thoroughly after handling.
Remove contaminated clothing and wash before reuse.
Remove contaminated clothing and wash before reuse.
Uso with adequate ventilation.
Do not get on skin or in eyes.
Do not ingest or inhale. Storage:
Store in a tightly closed container.
Store in a cool, dry, well-ventilated area away from incompatible substances. Chemical Name Spills/Leaks:
Absorb spill with inert material, (e.g., dry sand or earth), then place into a chemical waste container. Engineering Controls:
Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. General Information: Use proper personal protective equpiment as indicated in Section 8. Explosion Limits, Lower: Not available.

Upper: Not available. **** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION **** **** SECTION 6 - ACCIDENTAL RELEASE MEASURES **** 660114196 01/12/96 **** SECTION 7 - HANDLING and STORAGE **** none listed Exposure Limits ACGIH ACCT: 419149 CAT NO: 571369 none listed none listed none listed none listed 419149001 HSOIN none listed none listed none listed OSHA - Final PELS none listed PO NBR: 81449 PAGE: 2

Personal Protective Equipment

OSHA Vacated PELs:
Sodium Carbonate Monohydrate:
No OSHA Vacated PELs are listed for this chemical.
Sodium Citrate Dihydrate:
No OSHA Vacated PELs are listed for this chemical.

Water.
No OSHA Vacated PELs are listed for this chemical.
Cupric sulfate pentahydrate:
No OSHA Vacated PELs are listed for this chemical.

Eyes:

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133.

Viear natural rubber gloves, apron, and/or clothing.

Usear appropriate protective clothing to prevent skin exposure.

Respirators:
Follow the OSHA respirator regulations found in 29CFR
10.134. Always use a NIOSH-approved respirator when
necessary.

**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

Appearance:
Odor:
Not available.
Hapor Pressure:
Vapor Density:
Vapor Density:
Vapor Soint:
Viscosity:
Viscosi

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Dispose of in a manner consistent with federal, state, and local regulations RCRA D-Series Maximum Concentration of Contaminants. Not listed. RCRA D-Series Chronic Toxicity Reference Levels: Not listed. RCRA F-Series: Not listed. RCRA F-Series: Not listed. RCRA U-Series: Not listed. RCRA U-Series: Not listed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Carcinogenicity:
Sodium Carbonate Monohydrate -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Sodium Citrate Dihydrate -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Water -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Cupric sulfate pentahydrate -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology:
No information available.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ecotoxicity.

Not available.
Environmental Fate:
Not available.
Physical/Chemical:
Not available.
Physical/Chemical:
ot available.
                                                                                                                       No information available
                                                                                                                                                                               IATA
                                                                                                                                                                                                                              US DOT
No information available
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mutagenicity:
No data available.
Other Studies:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cupic sulfate Anhydrous: Embryo or Fetus: fetotoxicity. Ivn-mouse TDLo=3200 ug/kg. Specific Developmental Abnormalities: body wall, ivn- hanster TDLo=2130 ug/kg. cardiovascular and central nervous system, ivn-mouse TDLo=3200 ug/kg. TDLo=3200 ug/kg. Cupic sulfatae Anhydrous: Fertility: Cupic sulfatae Anhydrous: Fertility: Cupic sulfatae Anhydrous: Fertility: TDLo=3200 ug/kg. Paternal Effects: spermatogenesis, itt-rat TDLo=3192 ug/kg; testex/sperm duct/epididymis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conditions to Avoid:
High temperatures, incompatible materials.
Incompatibilities with Other Materials:
None reported.
Hazardous Decomposition Products:
Irritating and toxic furnes and gases.
Hazardous Polymerization: Has not been reported.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Teratoge
                                                 No information available. adian TDG No information available.
                                                                                                                                                                                                          No information available
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AS# 6132-04-3
AS# 6132-04-3
AS# 6132-04-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            data available.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Stability:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5968-11-6 unlisted.
6132-04-3 unlisted.
7732-18-5: ZC0110000
7758-99-8: GL8900000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      **** SECTION 11 - TOXICOLOGICAL INFORMATION ***
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       **** SECTION 13 - DISPOSAL CONSIDERATIONS ****
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          **** SECTION 10 - STABILITY AND REACTIVITY ****
**** SECTION 15 - REGULATORY INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       **** SECTION 12 - ECOLOGICAL INFORMATION **
                                                                                                                                                                                                                                                                                                                                 **** SECTION 14 - TRANSPORT INFORMATION ****
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mation available.
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01/12/96

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PO NBR:

81449

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CAT NO: 571369 ACCT:

PO

NBR: 81449

PAGE:

419149001

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Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class I Ozone depletors.

This material does not contain any Class I Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B. State
Not present on state lists from CA. PA. MN. MA.
Not present on state lists from CA. PA. MN. MA.
Not present on state lists from CA. PA. MN. MA.
Not present on state lists from CA. PA. MN. MA.
California No. Significant Risk Level:
Control of the chemicals in this product are listed.
Control of the chemicals in this product are listed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAS# 5968-11-6 is not on the TSCA inventory. It is a hydrate and exampt from TSCA inventory requirements (40ERZ70.3(u)(2)).

CAS# 6132-94-3 is not listed on the TSCA inventory.

It is for research and development use only.

CAS# 7732-18 5 is listed on the TSCA inventory.

CAS# 7758-99-8 is not on the TSCA inventory.

CAS# 7758-99-8 is not on the TSCA inventory.

Legath & Safety Reporting Ust

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b.

Section 12b.

Section 12b.

Section 301 the chemicals in this material have a SNUR under TSCA.

Section 302 (FQC)

Section 302 (FQC)

Section 302 (FQC)

Section 303 (FQC)

Section 313.

No chemicals are reportable under Section 313.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EXPOSUTE LIMITS:

OEL-ARAB RENDETICS

OEL-ARAB RENDETICS

OEL-ARAB RENDETICS

OEL-ARAB RENDETICS

OEL-ARAB RENDETICS

OEL-ARAB RENDETICS

OEL-AUSTRALIA: TWA

OEL-AUSTRALIA: TWA

OEL-BELGI

UM. 11VA 0.2 mg(Cu)/m3 (fume). OEL-BELGIUM: TWA 1 mg(Cu)/m3 (dust). OEL-D

UM. 11VA 0.2 mg(Cu)/m3 (fume). OEL-BELGIUM: TWA 1 mg(Cu)/m3 (dust). OEL-BELGIUM: TWA 1 mg(Cu)/m3 (dust). OEL-FINAND: TWA 1 mg(Cu)/m3 (dust). OEL-FINAND: TWA 1 mg(Cu)/m3 (dust). OEL-FINAND: TWA 0.2 mg(Cu)/m3 (dust). OEL-FINAND: TWA 0.3 mg(Cu)/m3 (fume). OEL-FINAND: TWA 0.4 mg(Cu)/m3 (dust). OEL-GERMANY: TWA 1 mg(Cu)/m3 (dust). OEL-GERMANY: TWA 1 mg(Cu)/m3.5TEL 0.4 mg(Cu)/m3 (dust). OEL-THE NETHERLANDS: TWA 1 mg(Cu)/m3 (dust). OEL-TWA 0.2 mg(Cu)/m3 (fume). OEL-SWEDENTWA 0.2 mg(Cu)/m3 (fume). OEL-SWEDENTWA 0.2 mg(Cu)/m3 (fume). OEL-SWEDENTWA 0.2 mg(Cu)/m3 (fume). OEL-SWEDENTWA 0.3 mg(Cu)/m
Additional Information:

No additional information available.

No additional information 9, 1995

MSDS Creation Date: Nevember 9, 1995

The information above is believed to be accurate and represents the best information above is believed to be however, we make no warranty of information currently available to us. However, we make no warranty of morchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAS# 7732-18-5 is listed on Canada's DSL/NDSL List.
CAS# 598-11-6 is not listed on Canada's ingredient Disclosure L
CAS# 6132-04-3 is not listed on Canada's ingredient Disclosure L
CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure L
CAS# 7738-99-8 is not listed on Canada's Ingredient Disclosure L
CAS# 7758-99-8 is not listed on Canada's Ingredient Disclosure L
European Labeling in Accordance with EC Directives
Hazard Symbols: Not available.
Risk Phrases:
Safety Phrases:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         None of the chemicals in this product are considered highly hazardous by OSHA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ** SECTION 16 - ADDITIONAL INFORMATION ****
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MANA
PPPP
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MATERIAL SAFETY DATA SHEET ****