

PHOTOGRAPHERS' FORMULARY INC.

PO Box 950 • Condon MT 59826 • 406-754-2891 • FAX 406-754-2896
E-MAIL: formulary@montana.com

FORMULARY PYROCATECHOL PAPER DEVELOPER 120ED

(Edwal-120) 1-liter kit

Formulary 120ED was created by Edmund Lowe of the Edwal Laboratories many years ago and was published in their now out-of-print book, "Modern Developing Methods". Formulary uses the name 120ED to distinguish this formula from Formulary 120, a soft working developer.

Formulary 120ED produces prints with rich black tones that have an abrupt gradation. The level of restrainer needed with this developer depends upon the type of paper you are using. Therefore, a procedure for customizing the restrainer level is given in these directions.

CHEMICALS CONTAINED IN THIS KIT

Your kit contains the following chemicals:

Chemical	Amount
Catechol	10g
Sodium sulfite	20g
Potassium carbonate, anhydrous	120g
Potassium bromide	5g
Benzotriazole	0.5g

CHEMICAL SAFETY

All chemicals are dangerous and must be treated with respect. Please read the warning on each package. There is only one chemical in this kit that needs special attention: catechol.

Catechol (pyrocatechin) has a high vapor pressure and it is a phenol. The high vapor pressure means that the solid catechol evaporates readily. When you open a bottle of catechol, you can smell it. When mixing a solution containing catechol, work in a well-ventilated area. When catechol is in solution its vapor pressure is not a problem. The fact that catechol is a phenol means that it is a corrosive and has the potential to cause skin burns. If you should spill a solution of catechol, wash the area (or skin) with soap and water. Use tongs or rubber gloves whenever possible.

The user assumes all risks upon accepting these chemicals. IF FOR ANY REASON YOU DO NOT WISH TO ASSUME ALL RISKS, PLEASE RETURN THESE CHEMICALS FOR A FULL REFUND.

If you want 500 ml of working solution, then:

$$500 \text{ ml} \times 0.05 = 25 \text{ ml}$$

If you want 1000 ml of working solution, then:

$$1000 \text{ ml} \times 0.05 = 50 \text{ ml}$$

MIXING THE WORKING SOLUTION

For Slow Papers (chloride or chlorobromide papers)

Approximate Volume of working Solution Desired

Solution	Parts	100 ml	500 ml	1000 ml
Stock Solution A	1	33 ml	165 ml	333 ml
Stock Solution B	2	66 ml	330 ml	666 ml
Water	None	none	none	none
Restrainer Solution	(determined)	by	experiment)	experiment)

Fast papers (bromide papers)

Approximate Volume of Working Solution Desired

Solution	Parts	100ml	500ml	1000ml
Stock Solution A	1	25ml	125ml	250ml
Stock Solution B	2	50ml	250ml	500ml
Distilled Water	1	25ml	125ml	250ml
Restrainer Solution	(determined)	by	experiment)	experiment)

DEVELOPMENT

Develop for 3 minutes at 20° C/68° F. Fix, clear, and wash using standard techniques.



PHOTOGRAPHERS' FORMULARY INC.

P.O. Box 950 • Condon MT 59826 • 406-754-2891 • FAX 406-754-2896
E-mail: formulary@montana.com

3/22/2007
10-0340



Material Safety Data Sheet

NFPA 	HMIS <table border="1"> <tr> <td>Health Hazard</td> <td style="text-align: center;">3</td> </tr> <tr> <td>Fire Hazard</td> <td style="text-align: center;">1</td> </tr> <tr> <td>Reactivity</td> <td style="text-align: center;">0</td> </tr> </table>	Health Hazard	3	Fire Hazard	1	Reactivity	0	Personal Protective Equipment See Section 15.
Health Hazard	3							
Fire Hazard	1							
Reactivity	0							

Section 1. Chemical Product and Company Identification Page Number: 1

Common Name/Trade Name: Pyrocatechol	Catalog Number(s): P1455
Manufacturer: SPECTRUM CHEMICAL MFG. CORP. 14422 S. SAN PEDRO STREET GARDENA, CA 90248	CAS#: 120-80-9
	RTECS: UX1050000
	TSCA: TSCA 8(b) inventory: Pyrocatechol
Commercial Name(s): Not available.	CI#: Not available.
Synonym: 1,2-Benzenediol	IN CASE OF EMERGENCY CHEMTREC (24hr) 800-424-9300 CALL (310) 516-8000
Chemical Name: Catechol	
Chemical Family: Not available.	
Chemical Formula: C6H6O2	
Supplier: SPECTRUM CHEMICAL MFG. CORP. 14422 S. SAN PEDRO STREET GARDENA, CA 90248	

Section 2. Composition and Information on Ingredients

Name	CAS #	Exposure Limits			% by Weight
		TWA (mg/m ³)	STEL (mg/m ³)	CEIL (mg/m ³)	
1) Pyrocatechol	120-80-9	20			100

Toxicological Data on Ingredients	Pyrocatechol: ORAL (LD50): Acute: 260 mg/kg [Rat]. 210 mg/kg [Guinea pig]. DERMAL (LD50): Acute: 800 mg/kg [Rabbit].
-----------------------------------	--

Section 3. Hazards Identification

Potential Acute Health Effects Extremely hazardous in case of skin contact (corrosive, irritant), of eye contact (irritant), of ingestion, of inhalation. Very hazardous in case of skin contact (sensitizer, permeator). The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe over-exposure can produce lung damage, choking, unconsciousness or death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Potential Chronic Health Effects Extremely hazardous in case of skin contact (corrosive, irritant), of eye contact (irritant), of ingestion, of inhalation. Very hazardous in case of skin contact (sensitizer, permeator).
CARCINOGENIC EFFECTS: Not available.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available.
 The substance is toxic to lungs, mucous membranes.
 Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage. Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

Section 4. First Aid Measures

Eye Contact Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Do not use an eye ointment. Seek medical attention.

Skin Contact If the chemical got onto the clothed portion of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under a deluge shower. If the chemical got on the victim's exposed skin, such as the hands : Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cold water may be used. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

Serious Skin Contact Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

Serious Inhalation Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. **WARNING:** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion Do not induce vomiting. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

Serious Ingestion Not available.

Section 5. Fire and Explosion Data

Flammability of the Product May be combustible at high temperature.

Auto-Ignition Temperature Not available.

Flash Points CLOSED CUP: 127.22°C (261°F). OPEN CUP: 136.67°C (278°F).

Flammable Limits Not available.

Products of Combustion These products are carbon oxides (CO, CO2).

Fire Hazards in Presence of Various Substances Not available.

Explosion Hazards in Presence of Various Substances Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards Not available.

Special Remarks on Explosion Hazards Not available.

Section 6. Accidental Release Measures

Small Spill	Use appropriate tools to put the spilled solid in a convenient waste disposal container.
Large Spill	Corrosive solid. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7. Handling and Storage

Precautions	Keep container dry. Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes.
Storage	Keep container dry. Keep in a cool place. Ground all equipment containing material. Corrosive materials should be stored in a separate safety storage cabinet or room.

Section 8. Exposure Controls/Personal Protection

Engineering Controls	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	Splash goggles. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Vapor and dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits	TWA: 5 (ppm) TWA: 20 (mg/m ³) Consult local authorities for acceptable exposure limits.

Section 9. Physical and Chemical Properties

Physical state and appearance	Solid. (Crystalline solid.)	Odor	Slight.
Molecular Weight	110.11 g/mole	Taste	Sweet. Bitter.
pH (1% soln/water)	Not available.	Color	Colorless.
Boiling Point	245.5°C (473.9°F)		
Melting Point	105°C (221°F)		
Critical Temperature	Not available.		
Specific Gravity	1.344 (Water = 1)		
Vapor Pressure	Not applicable.		
Vapor Density	3.79 (Air = 1)		
Volatility	Not available.		
Odor Threshold	Not available.		
Water/Oil Dist. Coeff.	Not available.		
Ionicity (in Water)	Not available.		
Dispersion Properties	See solubility in water.		

Solubility	Soluble in cold water.
------------	------------------------

Section 10. Stability and Reactivity Data

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	Not available.
Incompatibility with various substances	Not available.
Corrosivity	Non-corrosive in presence of glass.
Special Remarks on Reactivity	Not available.
Special Remarks on Corrosivity	Not available.
Polymerization	No.

Section 11. Toxicological Information

Routes of Entry	Dermal contact. Eye contact. Inhalation. Ingestion.
Toxicity to Animals	Acute oral toxicity (LD50): 210 mg/kg [Guinea pig]. Acute dermal toxicity (LD50): 800 mg/kg [Rabbit].
Chronic Effects on Humans	The substance is toxic to lungs, mucous membranes.
Other Toxic Effects on Humans	Extremely hazardous in case of skin contact (corrosive, irritant), of ingestion, of inhalation. Very hazardous in case of skin contact (sensitizer, permeator).
Special Remarks on Toxicity to Animals	Not available.
Special Remarks on Chronic Effects on Humans	Not available.
Special Remarks on other Toxic Effects on Humans	Not available.

Section 12. Ecological information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Products of Biodegradation	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation	The products of degradation are more toxic.
Special Remarks on the Products of Biodegradation	Not available.

Continued on Next Page

Section 13. Disposal Considerations

Waste Disposal

Section 14. Transport Information

DOT Classification CLASS 6.1: Poisonous material.

Identification : Toxic solid, organic, n.o.s. (Pyrocatechol) : UN2811 PG: III

Special Provisions for Transport Not available.

DOT (Pictograms)



Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations Pennsylvania RTK: Pyrocatechol
 Massachusetts RTK: Pyrocatechol
 TSCA 8(b) inventory: Pyrocatechol
 SARA 313 toxic chemical notification and release reporting: Pyrocatechol
 CERCLA: Hazardous substances.: Pyrocatechol

California Proposition 65 Warnings

Other Regulations OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications
 WHMIS (Canada) CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC).
 CLASS D-2B: Material causing other toxic effects (TOXIC).
 DSCL (EEC) R35- Causes severe burns.
 R43- May cause sensitization by skin contact.

HMIS (U.S.A.)

Health Hazard	3
Fire Hazard	1
Reactivity	0
Personal Protection	j

National Fire Protection Association (U.S.A.)

Health Flammability
 Reactivity
 Specific hazard

WHMIS (Canada) (Pictograms)



DSCL (Europe) (Pictograms)



TDG (Canada)
(Pictograms)



ADR (Europe)
(Pictograms)



Protective Equipment



Gloves.



Synthetic apron.



Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.



Splash goggles.

Section 16. Other Information

MSDS Code P4870

References Not available.

Other Special Considerations Not available.

Validated by Sonia Owen on 8/11/2006.

Verified by Sonia Owen.

Printed 9/13/2006.

CALL (310) 516-8000

Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.



THATCHER COMPANY MATERIAL SAFETY DATA SHEET

PRODUCT: SODIUM SULFITE, CATALYZED

Page 1 of 3

MSDS Date: December 2, 2003

Emergency Contact: 1-800-424-9300

SECTION I

PRODUCT NAME: Sodium Sulfite, Catalyzed

CHEMICAL NAME: Sodium Sulfite, catalyzed

CHEMICAL FAMILY: Inorganic Sulfite

SYNONYMS: B 501; Catalyzed Anhydrous Sodium Sulfite

FORMULA: Na₂SO₃ + catalyst

DOT SHIPPING INFORMATION:

Not DOT Regulated

SECTION II - HAZARDOUS INGREDIENTS

This material contains no ingredients which are known by Thatcher Company to be hazardous unless listed below.

HAZARDOUS MATERIAL	CAS NUMBER	w/w %	EXPOSURE LIMITS IN AIR
Sodium Sulfite	7757-83-7		TLV = 5 mg/m ³
Cobalt Sulfate (as Co)	10124-43-3		TLV = 0.05 mg/m ³ * PEL = 0.1 mg/m ³

*recommended

The specific identity of some ingredients may be withheld for confidential business purposes. However, all known potential health effects from exposure to these ingredients are being addressed.

SECTION III - PHYSICAL DATA

BOILING POINT (F): N/A

SPECIFIC GRAVITY: 2.633 @ 15.4 EC

VAPOR PRESSURE (mm Hg): N/A

% VOLATILE, BY VOLUME: N/A

VAPOR DENSITY (air = 1): N/A

EVAPORATION RATE: N/A

SOLUBILITY IN WATER: Soluble

APPEARANCE AND ODOR: White to pink crystals or powder with saline, sulfurous taste.

SECTION IV - FIRE AND EXPLOSION DATA

FLASH POINT: Nonflammable

FLAMMABLE LIMITS:

Lel: N/A Uel: N/A

EXTINGUISHING MEDIA:



THATCHER COMPANY MATERIAL SAFETY DATA SHEET
PRODUCT: SODIUM SULFITE, CATALYZED
Page 2 of 3

Use any.

SPECIAL FIRE-FIGHTING PROCEDURES:

Wear self-contained breathing apparatus if necessary.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

When heated, catalyzed sodium sulfite decomposes and emits highly toxic fumes of sodium oxide and sulfur oxides.

SECTION V - REACTIVITY DATA

STABILITY: Stable

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS OR MATERIALS TO AVOID:

None.

HAZARDOUS DECOMPOSITION PRODUCTS:

When heated, catalyzed sodium sulfite decomposes and emits toxic fumes of sodium oxide and sulfur oxides.

SECTION VI - HEALTH HAZARD DATA

CARCINOGENIC LISTING:

NTP: No ingredients listed in this section.

IARC MONOGRAPHS: No ingredients listed in this section.

OSHA 29 CFR 1910: No ingredients listed in this section.

ENTRY ROUTES & EFFECTS OF OVEREXPOSURE:

Contact: Contact may irritate eyes.

Ingestion: If swallowed, can cause irritation of stomach, nausea and gas.

STATEMENT OF PRACTICAL TREATMENT:

Contact: Flush exposed area thoroughly with soap and water. For eyes, flush with cool water for at least 15 minutes. If irritation persists, get medical attention.

Ingestion: If swallowed, give several glasses of water and call a physician immediately.

SECTION VII - SPECIAL PRECAUTIONS



THATCHER COMPANY MATERIAL SAFETY DATA SHEET
PRODUCT: SODIUM SULFITE, CATALYZED
Page 3 of 3

HANDLING AND STORAGE PRECAUTIONS:

Store in a cool, dry area .

STEPS TO BE TAKEN IF MATERIAL SPILLS OR LEAKS:

Wear proper safety equipment. Sweep up material and put into drums. Flush residue to sewer with large amounts of water (if permitted).

WASTE DISPOSAL METHOD:

Dispose of in landfill. Comply with all local, state and federal regulations.

OTHER PRECAUTIONS:

N/A

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION:

Use dust mask as needed to avoid breathing dust.

VENTILATION:

Use adequate ventilation.

EYE PROTECTION:

Wear goggles or safety glasses.

SKIN PROTECTION:

Wear rubber gloves.

OTHER PROTECTIVE EQUIPMENT:

None required.

ACGIH = American Conference of Governmental Industrial Hygienists
CL = Ceiling Level
IARC = International Agency for Research on Cancer: Monographs
OSHA = Occupational Safety and Health Administration
N/A = Not Applicable
NTP = National Toxicology Program: Annual Report on Carcinogens
PEL = Permissible Exposure Level (OSHA)
TLV = Threshold Limit Value (ACGIH)
TWA = Time Weighted Average over 8 Hours
STEL = Short Term Exposure Limit (ACGIH)
ND = Not Determined

This information is, to the best of our knowledge, accurate but may not be complete. THATCHER COMPANY furnishes this information in good faith, but without warranty, representation or guarantee of its accuracy, completeness, or reliability.

10 0-190
REPORT NUMBER: 703
MSDS NO: MZP5609
MAINFRAME UPLOAD DATE: 05/26/04

UNIVAR USA INC.
MATERIAL SAFETY DATA SHEET

PAGE: 001
VERSION: 002

PRODUCT: POTASSIUM CARBONATE

ORDER NO: 240113
PROD NO : 720940

PHOTOGRAPHERS FORMULARY
C/O REDDAWAY DOCK
CALL AND HE WILL PU

MISSOULA ,MT 59802

UNIVAR USA INC.
6100 CARILLON POINT , KIRKLAND

(425)889-3400
, WA 98033

----- EMERGENCY ASSISTANCE -----

FOR EMERGENCY ASSISTANCE INVOLVING CHEMICALS CALL - CHEMTREC
(800)424-9300

PRODUCT IDENTIFICATION

PRODUCT NAME: POTASSIUM CARBONATE
MSDS#: MZP5609
DATE ISSUED: 02/12/2004
SUPERSEDES: 09/04/1997
ISSUED BY: 008614

MATERIAL SAFETY DATA SHEET

24 hour

Emergency Telephone: 908-859-2151
CHEMTREC: 800-424-9300
National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 703-527-3887

POTASSIUM CARBONATE

1. Product Identification

PRODUCT: POTASSIUM CARBONATE

ORDER NO: 240113
PROD NO : 720940

Synonyms: Pearl ash; potash; carbonic acid, dipotassium salt; salt of tartar
CAS No.: 584-08-7
Molecular Weight: 138.21
Chemical Formula: K₂CO₃

Distributed by:
Univar USA Inc.
6100 Carillon Point
Kirkland, WA 98033
425-889-3400

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Potassium Carbonate	584-08-7	99 - 100%	Yes

3. Hazards Identification

Emergency Overview

WARNING! CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. MAY BE HARMFUL IF SWALLOWED.

Potential Health Effects

Inhalation:

Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath.

Ingestion:

Causes irritation to the gastrointestinal tract. Symptoms may include nausea, vomiting and diarrhea. May have moderate toxic effects if consumed in large enough quantities. Ingestion of large amounts may be corrosive to mouth, throat and GI tract and produce abdominal pains, vomiting, diarrhea, and circulatory collapse.

Skin Contact:

Contact with dry material causes irritation. In aqueous solution it is a strong caustic and as such may have corrosive effects on the skin.

Eye Contact:

Causes extreme irritation, redness, pain and possibly corneal damage.

PRODUCT: POTASSIUM CARBONATE

ORDER NO: 240113

PROD NO : 720940

Chronic Exposure:

A chronic dermatitis may follow repeated contact with this substance.

Aggravation of Pre-existing Conditions:

No information found.

4. First Aid Measures**Inhalation:**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion:

If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Skin Contact:

Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire Fighting Measures**Fire:**

Not considered to be a fire hazard.

Explosion:

Not considered to be an explosion hazard. An explosion occurred after mixing sodium hydrosulfite, aluminum powder, potassium carbonate and benzaldehyde.

Fire Extinguishing Media:

Use any means suitable for extinguishing surrounding fire.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

PRODUCT: POTASSIUM CARBONATE

ORDER NO: 240113

PROD NO : 720940

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust.

7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible substances. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

None established.

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.

Personal Respirators (NIOSH Approved):

For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:

Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

PRODUCT: POTASSIUM CARBONATE

ORDER NO: 240113

PROD NO : 720940

Appearance:

Fine white granules.

Odor:

Odorless.

Solubility:

Soluble in equal parts of cold water.

Specific Gravity:

2.29

pH:

11.6 Aqueous solution

Volatiles by volume @ 21C (70F):

0

Boiling Point:

Decomposes.

Melting Point:

891C (1636F)

Vapor Density (Air=1):

No information found.

Vapor Pressure (mm Hg):

No information found.

Evaporation Rate (BuAc=1):

No information found.

10. Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:

Contact with acids and involvement in a fire can cause formation of carbon dioxide.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Acids, chlorine trifluoride, magnesium. An explosion occurred after mixing

PRODUCT: POTASSIUM CARBONATE

ORDER NO: 240113
PROD NO : 720940

sodium hydrosulfite, aluminum powder, potassium carbonate and benzaldehyde.

Conditions to Avoid:

Moisture, heat, dusting and incompatibles.

11. Toxicological Information

Oral rat LD50: 1870 mg/kg.

/Cancer Lists/

--- NTP Carcinogen---

Ingredient	Known	Anticipated	IARC Category
------------	-------	-------------	---------------

Potassium Carbonate (584-08-7)	No	No	None
--------------------------------	----	----	------

12. Ecological Information

Environmental Fate:

No information found.

Environmental Toxicity:

No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Not regulated.

15 Regulatory Information

/Chemical Inventory Status - Part 1/

Ingredient	TSCA	EC	Japan	Australia
------------	------	----	-------	-----------

Potassium Carbonate (584-08-7)	Yes	Yes	Yes	Yes
--------------------------------	-----	-----	-----	-----

/Chemical Inventory Status - Part 2/

Ingredient	Korea	DSL	NDSL	Phil.
------------	-------	-----	------	-------

Potassium Carbonate (584-08-7)	Yes	Yes	No	Yes
--------------------------------	-----	-----	----	-----

PRODUCT: POTASSIUM CARBONATE

ORDER NO: 240113

PROD NO : 720940

/Federal, State & International Regulations - Part 1/

Ingredient	-SARA 302		SARA 313	
	RQ	TPQ	List Chemical Catg.	
Potassium Carbonate (584-08-7)	No	No	No	No

/Federal, State & International Regulations - Part 2/

Ingredient	-RCRA-		-TSCA-
	CERCLA	261.33	8(d)
Potassium Carbonate (584-08-7)	No	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
 SARA 311/312: Acute: Yes Chronic: No Fire: No Pressure: No
 Reactivity: No (Pure / Solid)

Australian Hazchem Code: None allocated.

Poison Schedule: None allocated.

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: 2 Flammability: 0 Reactivity: 0

REPORT NUMBER: 703

UNIVAR USA INC.

PAGE: 008

MSDS NO: NZP5609

MATERIAL SAFETY DATA SHEET

MAINFRAME UPLOAD DATE: 05/26/04

VERSION: 002

PRODUCT: POTASSIUM CARBONATE

ORDER NO: 240113

PROD NO : 720940

----- FOR ADDITIONAL INFORMATION -----

CONTACT: MSDS COORDINATOR UNIVAR USA INC.
DURING BUSINESS HOURS, PACIFIC TIME (425)889-3400

03/27/06 14:40 PRODUCT: 720940 CUST NO: 113365 ORDER NO: 240113

----- NOTICE -----

***** UNIVAR USA INC("UNIVAR"), EXPRESSLY DISCLAIMS

ALL EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A

PARTICULAR PURPOSE, WITH RESPECT TO THE PRODUCT OR INFORMATION PROVIDED

HEREIN, AND SHALL UNDER NO CIRCUMSTANCES BE LIABLE FOR INCIDENTAL OR

CONSEQUENTIAL DAMAGES. **

DO NOT USE INGREDIENT INFORMATION AND/OR PERCENTAGES IN THIS MSDS AS A
PRODUCT SPECIFICATION. FOR PRODUCT SPECIFICATION INFORMATION REFER TO A PRODUCT
SPECIFICATION SHEET AND/OR A CERTIFICATE OF ANALYSIS. THESE CAN BE OBTAINED FROM
YOUR LOCAL UNIVAR SALES OFFICE.

ALL INFORMATION APPEARING HEREIN IS BASED UPON DATA OBTAINED FROM THE
MANUFACTURER AND/OR RECOGNIZED TECHNICAL SOURCES. WHILE THE INFORMATION IS
BELIEVED TO BE ACCURATE, UNIVAR MAKES NO REPRESENTATIONS AS TO ITS ACCURACY OR
SUFFICIENCY. CONDITIONS OF USE ARE BEYOND UNIVAR'S CONTROL AND THEREFORE USERS
ARE RESPONSIBLE TO VERIFY THIS DATA UNDER THEIR OWN OPERATING CONDITIONS TO
DETERMINE WHETHER THE PRODUCT IS SUITABLE FOR THEIR PARTICULAR PURPOSES AND THEY
ASSUME ALL RISKS OF THEIR USE, HANDLING, AND DISPOSAL OF THE PRODUCT, OR FROM
THE PUBLICATION OR USE OF, OR RELIANCE UPON, INFORMATION CONTAINED HEREIN.
THIS INFORMATION RELATES ONLY TO THE PRODUCT DESIGNATED HEREIN, AND DOES NOT
RELATE TO ITS USE IN COMBINATION WITH ANY OTHER MATERIAL OR IN ANY OTHER
PROCESS.

*** END OF MSDS ***

10-0930
9/20/2007



COLUMBUS CHEMICAL INDUSTRIES INC.

P.O. BOX 8
COLUMBUS, WISCONSIN 53025-0008
(920) 623-2140
FAX (920) 623-2577

Material Safety Data Sheet

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements

U.S. Department of Labor

Occupational Safety and Health Administration
(Non-Mandatory Form)
Form Approved
OMB No. 1218-0072

IDENTITY (as Used on Label and List)

Potassium Bromide

Note: Blank spaces are not permitted. If any item is not applicable or no information is available, the space must be marked to indicate that.

Section I

Manufacturers /Distributor Address Number Street City State and Zip Code
Columbus Chemical Industries, Inc.
N4335 Temkin Road
Columbus, WI 53925-0008

Emergency Telephone Number
CHEMTREC 1 (800) 424-9300
Telephone Number for Information
1 (920) 623-2140
Date Prepared
06-27-2006
Signature of Preparer (optional)

Section II - Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity, Common Name(s))	CAS #	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
Potassium Bromide*	7758-02-3	Not established	Not established	Not established	

* Synonym: Bromide salt of potassium.

Section III - Physical/Chemical Characteristics

Boiling Point:	1435°C (2613°F)	Specific Gravity (4/4 = 1)	Not Available
Vapor Pressure (mm Hg)	Not Available	Melting Point	730°C (1436°F)
Vapor Density (AIR = 1)	Not available	Evaporation Rate (Butyl Acetate = 1)	Not Available

Solubility in Water
70g/100 mL @ 20 °C (68 °F).

Appearance and Odor
White, odorless crystals.

Section IV Fire and Explosion Hazard Data

Flash Point (Method Used)	Flammable Limits	LEL	UEL
Nonflammable		Not applicable	Not applicable

Extinguishing Media
Use extinguishing media appropriate for surrounding fire.

Special Fire Fighting Procedures
In the event of a fire, wear full protective clothing and NIOSH/MSHA-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

Unusual Fire and Explosion Hazards
May produce toxic fumes under fire conditions.

Section V Reactivity Data

Stability	Unstable		Conditions to Avoid	Incompatibles and moisture.
	Stable	X		

Incompatibility Materials to Avoid

Boron trifluoride, oxidizing agents, acids.

Hazardous Decomposition or Byproducts

Emits toxic fumes of bromide and potassium oxides.

Hazardous Polymerization	Conditions to Avoid		
	May Occur		Not available.
	Will Not Occur	X	

Section VI Health Hazard Data

Routes of Entry	Inhalation ?	Skin ?	Ingestion ?
	Yes	Yes	Yes

Health Hazards (Acute and Chronic)

SKIN: May cause irritation of skin. EYE: May causes eye irritation. INHALATION: May be harmful if inhaled. Material may cause irritation to the mucous membranes and upper respiratory tract. INGESTION: May be harmful if swallowed.

Carcinogenicity	NTP	IARC Monographs	OSHA REGULATED?
	Not Listed	Not Listed	Not Listed

Signs and Symptoms of Exposure.

EYES: Redness, pain, tearing, conjunctivitis. SKIN: Redness, swelling, pain, itchiness, rash. INGESTION: Gastrointestinal pain, burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting.

Medical Conditions Generally Aggravated by Exposure

Unknown

Emergency and First Aid Procedures EYES: immediately flush with large amounts of water for at least 15 minutes. SKIN: remove contaminated clothing, wash area with soap and water. Get medical assistance if irritation persists. INHALATION: Seek medical attention if breathing is difficult. INGESTION: Do not induce vomiting. Contact a physician.

Section VII Precautions for Safe Handling and Use

Steps to be Taken in Case Material is Released or Spilled Evacuate area. Wear NIOSH/MSHA-approved respirator, chemical-resistant goggles, rubber boots, apron and rubber gloves. Sweep up and place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Waste Disposal Method Dispose of material in accordance with all applicable Federal, state, and local regulations.

Precautions to be Taken in Handling and Storing Store in a cool, dry, well-ventilated area in tightly-closed, plainly-labelled containers. Store in a resistant area. Protect against moisture, physical damage and light. Maintain adequate ventilation. Wash thoroughly after handling. Do not ingest or breathe dust. Protect exposed tissues. Store away from heat and incompatibles.

Other Precautions Containers, even when empty, will retain residue. Always obey hazard warnings and handle empty containers as if they were full.

Section VII Control Measures

Respiratory Protection (Specify Type) NIOSH/MSHA approved dust respirator.

Ventilation	Local Exhaust	Recommended.	Special	Eye wash nearby.
	Mechanical (General)	Recommended.	Other	Safety shower nearby.

Protective Gloves Appropriate chemical-resistant gloves. **Eye Protection** Chemical safety goggles

Other Protective Clothing or Equipment Lab coat or apron.

Work /Hygienic Practices Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work area. Avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes and clothing. Do not breathe dust.

Columbus Chemical Industries, Inc. ("Columbus") believes that the information herein is factual but it is not intended to be all inclusive. The information relates only to the specific Material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because Columbus has no continuing control over the Material, those handling, storing or using the Material should satisfy themselves that they have current information regarding the particular way the Material is handled, stored and used and that the same is done in accordance with federal, state and local law. COLUMBUS MAKES NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING (WITHOUT LIMITATION) WARRANTIES WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN OR WITH RESPECT TO FITNESS FOR ANY PARTICULAR USE.

10-0250 Rec'd 10-94

CHARKIT CHEMICAL CORPORATION

330 POST ROAD, DARIEN, CONNECTICUT 06820

TRANSPORTATION EMERGENCY:

CALL CHEMTREC: 800-424-9300

MATERIAL SAFETY DATA SHEET

NON-TRANSPORTATION EMERGENCY:

CALL CHARKIT: 203-655-3400

FAX: 203-655-8643

I. PRODUCT IDENTIFICATION:

CHEMICAL NAME> BENZOTRIAZOLE
PRODUCT NAME> BENZOTRIAZOLE
CHEMICAL FAMILY> TRIAZOLE
PRODUCT CODE> 790-04400
SYNONYMS> 1-H BENZOTRIAZOLE
CAS NUMBER> 95-14-7
FORMULA> C6 H5 N3

II. HAZARDOUS INGREDIENTS:

<u>INGREDIENT NAME</u>	<u>EXPOSURE LIMITS</u>	<u>CONCENTRATION (%)</u>
<u>INGREDIENT NAME</u> /CAS NUMBER		
BENZOTRIAZOLE		
95-14-7	OSHA PEL: NUISANCE DUST 15mg/m ³	NOT LESS THAN
	ACGIH TLV: NUISANCE DUST 10mg/m ³	99%

CHARKIT CHEMICAL CORPORATION

BENZOTRIAZOLE

790-04400

MSDS PAGE: 1

APPROVAL DATE: 11 May 1992

III. PHYSICAL PROPERTIES:

<u>PHYSICAL FORM</u> >	FLAKES
<u>COLOR</u> >	OFF-WHITE
<u>ODOR</u> >	SLIGHT CHARACTERISTIC ODOR
<u>MOLECULAR WEIGHT</u> >	119.12
<u>pH</u> >	NO DATA AVAILABLE
<u>BOILING POINT</u> >	350° C
<u>MELTING/FREEZING POINT</u> >	94°-99° C
<u>VISCOSITY</u> >	NO DATA AVAILABLE
<u>SOLUBILITY IN WATER</u> >	2.0
<u>SPECIFIC GRAVITY</u> >	1.36 (SOLID)
<u>BULK DENSITY</u> >	NO DATA AVAILABLE
<u>VAPOR PRESSURE</u> >	0.04mm
<u>EVAPORATION RATE</u> >	NON-VOLATILE (BUTYL ACETATE=1)
<u>% VOLATILE BY VOLUME</u> >	NONE
<u>VAPOR PRESSURE</u> >	4.1 (CALCULATED; AIR-1)

IV. FIRE AND EXPLOSION DATA

<u>FLASH POINT</u> >	340° F
<u>TEST CUP METHOD</u> >	CC
<u>FLAMMABLE</u> >	NO DATA AVAILABLE
<u>COMBUSTIBLE</u> >	NO DATA AVAILABLE
<u>UPPER EXPLOSIVE LIMIT</u> >	NO DATA AVAILABLE
<u>LOWER EXPLOSIVE LIMIT</u> >	DUST MEC. 0.03 oz/cu. ft. %
<u>AUTO-IGNITION TEMP</u> >	NO DATA AVAILABLE
<u>EXTINGUISHING MEDIA</u> >	CARBON DIOXIDE, DRY CHEMICAL, FOAM

SPECIAL FIRE-FIGHTING>
PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used. Water spray may be ineffective. If water is used, fog nozzles are preferred. Water may be used to cool closed containers to prevent pressure build-up.

UNUSUAL FIRE AND>
EXPLOSION HAZARDS

Airborne dust is rated a severe explosion hazard at a minimum concentration of 0.03 ounce/cubic foot (30 grams/cubic meter). During emergency conditions over-exposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

V. HUMAN HEALTH DATA

ROUTE(S) OF ENTRY> EYES, SKIN, INHALATION

HUMAN EFFECTS AND SYMPTIONS OF OVEREXPOSURE:

INHALATION> MAY CAUSE IRRITATION OF RESPIRATORY TRACT

INGESTION> INGESTION OF LARGE DOSES MAY CAUSE GASTROINTESTINAL UPSET

SKIN CONTACT> MAY CAUSE MILD IRRITATION AND REDDENING

EYE CONTACT> CONTACT IS LIKELY TO CAUSE SEVERE IRRITATION.

CHRONIC EXPOSURE> DETAILED INFORMATION ABOUT OVEREXPOSURE IS UNAVAILABLE WITH NO EXAMPLE OF OBVIOUS OVEREXPOSURE WITH RESULTANT SYMPTOMS. ANIMAL STUDIES INDICATE NERVOUS SYSTEM EFFECTS.

AGGRAVATION OF PRE-> EXISTING CONDITONS NO DATA AVAILABLE

CARCINOGENICITY> NOT LISTED BY NTP, IARC OR REGULATED AS A CARCINOGEN BY OSHA.

VI. FIRST AID

INHALATION> REMOVE TO FRESH AIR. CALL A PHYSICIAN.
IF BREATHING IS DIFFICULT GIVE OXYGEN.
IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION.

INGESTION> INDUCE VOMITING BY GIVING SEVERAL GLASSES OF WATER AND STICKING FINGER DOWN THROAT. SEEK MEDICAL ATTENTION.

SKIN CONTACT> IN CASE OF CONTACT WASH SKIN WITH SOAP AND WATER.
WASH CLOTHING BEFORE REUSING.
CALL A PHYSICIAN IF IRRITATION PERSISTS.

VI. FIRST AID (CONTINUED)

EYE CONTACT> IMMEDIATELY FLUSH EYES WITH RUNNING WATER FOR 15 MINUTES
CALL A PHYSICIAN

VII. EMPLOYEE PROTECTION RECOMMENDATIONS

EYE PROTECTION> USE CHEMICAL SAFETY GOGGLES.
DO NOT WEAR CONTACT LENS IF AIRBORNE DUST IS PRESENT.

SKIN PROTECTION> USE CHEMICALLY RESISTENT GLOVES AND CLOTHING.
WASH FACE AND HANDS BEFORE EATING OR DRINKING.

PERSONAL RESPIRATORS> USE A NIOSH/MSHA APPROVED DUST RESPIRATOR IF DUST EXPOSURE
LIMITS CANNOT BE CONTROLLED BY VENTILATION.

VENTILATION SYSTEM> USE LOCAL EXHAUST IF DUST CONCENTRATION EXCEEDS NUISANCE
EXPOSURE LIMIT OR IF WORKER DISCOMFORT EXISTS.

ADDITIONAL MEASURES> PROVIDE EMERGENCY SHOWERS AND EYE WASH STATIONS.
TRAIN IN THE SAFE USE AND HANDLING OF HAZARDOUS CHEMICALS.

VIII. REACTIVITY DATA:

STABILITY> STABLE UNDER ORDINARY CONDITIONS OF USE AND STORAGE.

CONDITIONS TO AVOID> NONE KNOWN

HAZARDOUS POLYMERIZATION> WILL NOT OCCUR

CONDITIONS TO AVOID> NONE KNOWN

INCOMPATIBILITIES> OXIDIZING AGENTS

DECOMPOSITION TEMPERATURE> NO DATA AVAILABLE

DECOMPOSITION PRODUCTS> IN FIRE, CARBON DIOXIDE, CARBON MONOXIDE, NITROGEN OXIDES,
HCN IN REDUCING ATMOSPHERES

IX. SPILL AND LEAK PROCEDURES:

GENERAL SAFETY>

REMOVE ALL SOURCES OF IGNITION; VENTILATE AREA.
PROVIDE PROTECTION FROM INHALATION OF DUST OR FUMES.

SPILL OR LEAK RESPONSE>

UTILIZE RECOMMENDED PROTECTIVE CLOTHING AND EQUIPMENT.
SWEEP UP SPILL AND PLACE IN CONTAINERS TO RECLAIM OR DISPOSE.
AVOID DISPERSING DUST INTO AIR; USE WATER SPRAY IF NEEDED.

WASTE DISPOSAL>

CHECK FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.
PREVENT WASH WATER FROM ENTERING GROUND WATER. DISPOSE
IN SANITARY LANDFILL OR APPROVED INCINERATOR.

X. SPECIAL PRECAUTIONS AND STORAGE DATA:

STORAGE TEMPERATURE>

MIN: NO DATA AVAILABLE

MAX: NO DATA AVAILABLE

AMBIENT: NO DATA AVAILABLE

SHELF LIFE>

NO DATA AVAILABLE

SPECIAL SENSITIVITY>

NO DATA AVAILABLE

HANDLING & STORAGE>

MAINTAIN SAFE HOUSEKEEPING PRACTICES

PRECAUTIONS

STORE IN COOL DRY AREA; KEEP CONTAINERS TIGHTLY CLOSED; AVOID
CREATING AIRBORNE DUST CONCENTRATIONS WHICH MAY CREATE A
POTENTIAL DUST EXPLOSION HAZARD. AVOID CONTACT WITH EYES,
SKIN AND CLOTHING. DO NOT TAKE INTERNALLY. CLEAN UP SPILLS.

XI. SHIPPING INFORMATION:

D.O.T. SHIPPING NAME>

CHEMICALS N.O.S.(BENZOTRIAZOLE)

HAZARD CLASS>

NONE

U.N. NUMBER>

NONE

PACKING GROUP>

NONE

LABELS>

NONE

R.Q. ENTRY REQUIRED>

NO

XII. ANIMAL TOXICITY DATA:

ACUTE TOXICITY:

<u>ORAL LD 50></u>	560 mg/kG (rat)
<u>DERMAL LD 50></u>	2 g/kG
<u>INHALATION LD 50></u>	1.9 mg/liter (rat; 3 hour)
<u>SKIN EFFECTS></u>	NOT A PRIMARY SKIN IRRITANT (rabbit)
<u>SENSITIZATION></u>	NO DATA AVAILABLE
<u>EYE EFFECTS></u>	CAUSED SEVERE EYE IRRITATION (rabbit)

OTHER TOXICITY:

<u>SUBCHRONIC TOXICITY></u>	NO DATA AVAILABLE
<u>CHRONIC TOXICITY></u>	NO DATA AVAILABLE
<u>AQUATIC TOXICITY></u>	28 mg/liter (bluegill sunfish; minnow)
<u>OTHER TOXICITY DATA></u>	NO DATA AVAILABLE

XIII. FEDERAL REGULATORY INFORMATION:

OSHA STATUS> NOT HAZARDOUS

TSCA STATUS> LISTED ON TSCA INVENTORY

CERCLA RQ> NONE

RCRA STATUS> NOT HAZARDOUS WASTE IN PURCHASED FORM.

SARA TITLE III:

§302 EHS RQ> NOT APPLICABLE

§302 EHS TPQ> NOT APPLICABLE

§313 TOXIC CHEMICALS> NONE

§311/312> NONE

HAZARD CATEGORIES

OSHA: OCCUPATIONAL HEALTH AND SAFETY ACT; HAZARD STATUS UNDER OSHA HAZARD COMMUNICATION STANDARD 29.

TSCA: TOXIC SUBSTANCES CONTROL ACT; LISTING DOES NOT INDICATE HAZARD STATUS.

CERCLA SEC. 103: COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT (SUPERFUND); RELEASES TO AIR, LAND OR WATER OF THE SE
HAZARDOUS SUBSTANCES WHICH EXCEEDED THE REPORTABLE QUANTITY (RQ) MUST BE REPORTED TO THE NATIONAL RESPONSE CENTER. (800-424-8802); 40 CFR 372.66.

RCRA: RESOURCE CONSERVATION AND RECLAMATION ACT; COMMERCIAL CHEMICAL PRODUCT WASTES DESIGNATED AS ACUTE HAZARDS AND TOXIC; 40 CFR 261.33.

SARA SECTION 302 EHS RQ: REPORTABLE QUANTITY OF EXTREMELY HAZARDOUS SUBSTANCE, LISTED AT 40 CFR 365.

SARA SECTION 302 EHS TPQ: THRESHOLD PLANNING QUANTITY OF EXTREMELY HAZARDOUS SUBSTANCE.

SARA SECTION 313 CHEMICALS: TOXIC SUBSTANCES SUBJECT TO ANNUAL RELEASE REPORTING REQUIREMENTS LISTED AT 40 CFR 372.65.

SARA SECTION 311/312 CHEMICALS: HAZARD CATEGORIES FOR REPORTING REQUIREMENTS.

CHARKIT CHEMICAL CORPORATION

BENZOTRIAZOLE

790-04400

MSDS PAGE: 6

APPROVAL DATE: 11 May 1992

XIV. OTHER REGULATORY INFORMATION:

THE FOLLOWING CHEMICALS ARE SPECIFICALLY LISTED BY INDIVIDUAL STATES; OTHER PRODUCT SPECIFIC HEALTH AND SAFETY DATA IN OTHER SECTIONS OF THIS MSDS MAY ALSO BE APPLICABLE FOR STATE REQUIREMENTS. FOR DETAILS ON YOUR REGULATORY REQUIREMENTS YOU SHOULD CONTACT THE APPROPRIATE AGENCY IN YOUR STATE.

STATE CODE	COMMENTS:
<u>NJ4</u>	NEW JERSEY; INCLUDED IN 5 PREDOMINANT INGREDIENTS > 1%
<u>PA3</u>	PENNSYLVANIA; NON-HAZARDOUS PRESENT AT 3% OR GREATER
<u>CA65</u>	CALIFORNIA PROPOSITION 65; TO OUR KNOWLEDGE THIS PRODUCT CONTAINS LEVELS OF LISTED SUBSTANCES WHICH CALIFORNIA HAS FOUND TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE EFFECTS
<u>MSL</u>	MASSACHUSETTS SUBSTANCE LIST (MSL); ; HAZARDOUS SUBSTANCES AND EXTRAORDINARILY HAZARDOUS SUBSTANCES ON THE MSL MUST BE IDENTIFIED WHEN PRESENT IN PRODUCTS

INGREDIENT NAME /CAS NUMBER	CONCENTRATION	STATE CODE
BENZOTRIAZOLE 95-14-7	99%	NJ4, PA3, MSL

THIS INFORMATION IS FURNISHED WITHOUT WARRANTY, EXPRESSED OR IMPLIED, EXCEPT THAT IT IS ACCURATE TO THE BEST KNOWLEDGE OF CHARKIT CHEMICAL CORPORATION. THE DATA ON THESE SHEETS RELATES ONLY TO THE SPECIFIC MATERIAL DESIGNATED HEREIN. CHARKIT CHEMICAL CORPORATION ASSUMES NO LEGAL RESPONSIBILITY FOR USE OR RELIANCE UPON THIS DATA.

