



FOR ANY EMERGENCY, CALL 24HOURS/ 7 DAYS:	1-800-654-6911
FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC(R):	1-800-424-9300
FOR ALL MSDS QUESTIONS & REQUESTS, CALL:	1-800-511-MSDS

PRODUCT NAME: HNR 120

I. PRODUCT AND COMPANY IDENTIFICATION

REVISION DATE: SUPERCEDES:	02-16-2001 12-13-2000
MSDS NO:	00555-0012 - 704510
SYNONYMS:	None
CHEMICAL FAMILY:	Organic mixture
DESCRIPTION / USE:	Negative photoresist
FORMULA:	Not applicable/Mixture

Arch Chemicals, Inc. 501 Merritt 7 PO Box 5204 Norwalk, CT 06856-5204

II. COMPOSITION/INFORMATION ON

INGREDIENTS

CAS #	% Range
1330-20-7	65 - 75
100-41-4	15 - 18
68441-13-4	9 - 15
5284-79-7	0.1 - 0.6
	CAS # 1330-20-7 100-41-4 68441-13-4 5284-79-7

III. HAZARDS IDENTIFICATION

OSHA Hazard Classification: flammable, eye irritant, skin irritant, respiratory irritant, central nervous system depressant, liver toxin, blood toxin, kidney toxin, lung toxin

Routes of Entry:	Inhalation, skin, eyes, ingestion
Chemical Interactions:	No known interactions
Medical Conditions Aggravated:	Skin diseases, Respiratory diseases including asthma and bronchitis, Pre-
	existing liver diseases, Pre-existing kidney disease, cardiovascular disease

Odor Threshold: Xylene 20.0 ppm Irritation Threshold: Xylene 100.0 - 200.0 ppm tazardous Materials Identification System/National Fire Protection Association Classifications: Hazard Rainge: Hazard Rainge: Halt Halt Hazard Rainge: Halt Halt Parack Rainge: Halt Halt Protection Association Classifications Inhalation Toxicity: Not expected to cause significant toxicity unless there is prolonged exposure to high concentrations. Inhalation of high concentrations may result in central nervous system (CNS) effects such as dizziness, weakness, fatigue, nausea, headache, and lack of coordination. Inhalation Irritation: Inhalation Irritation: High concentrations may cause cardiac sensitization leading to risk of arrhythmia (irregular heartbeat). Inhalation Irritation: High concentrations are moderate irritation consisting of transient redness and swelling. This irritant effect would not be expected to occur from dermal contact. Eye Contact Contact may cause moderate irritation consisting of transient damage. Skin Contact: Skin contact may cause moderate irritation consisting of transient edness, swelling, and mucous membrane discharge to the conjunctiva. No corneal involvement or visual impairment is expected. Ingestion Tritation: Ingestion may cause irritation of the gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting, lethargy or diarbea. Palonged (Chronic) H	Human Thresho	ld Respons	se Data						
Xylene 20.0 ppm Irritation Threshold: 100.0 - 200.0 ppm Hazard Buttification System/National Fire Protection Association Classifications Hazard Ratings: Health Hall S 2* NFPA Not established Inhalation Toxicity: Not established Not expected to cause significant toxicity unless there is prolonged exposure to high concentrations. Inhalation of high concentrations may result in central nervous system (CNS) effects such as dizziness, weakness, fatigue, nausea, headache, and lack of coordination. Inhalation Toxicity: Not expected to cause significant toxicity unless there is prolonged exposure to high concentrations may cause cardiac sensitization leading to risk of arrhythmia (irregular heartbeat). Inhalation Irritation: High concentrations are moderately irritating to the eyes, nose, throat, and lungs. Skin Contact: Stepected. Contact: Contact: Contact: Contact: Contact: Contact: Ingestion Irritation: Ingestion react, contact may cause moderate irritation consisting of transient redness, swelling, and mucous membrane discharge to the conjunctiva. No corneal involvement or visual impairment is expected. Ingestion Toxicity: Slightly toxic if swallowed. AcuteTarget Organ Toxicity: Central nervous system, Heart, Eyes, Skin, Respiratory Tract, Mucous membranes Trolonged (Chronic) Health Effects Carcinogenicity: The International Agency for Research on Cancer (IARC) has classified this product	Odor Thresho	ld:							
Irritation Threshold: Xylene 100.0 - 200.0 ppm Hazardous Materials Identification System/National Fire Protection Association Classifications Hazard Ratings: Health Classifications Rescuence of the second system (CNS) effects such as disconding to the second system (CNS) effects such as diszenses, weakness, fatigue, nausea, headache, and lack of coordination. Inhalation Toxicity: Not expected to cause significant toxicity unless there is prolonged exposure to high concentrations. Inhalation of high concentrations may result in central nervous system (CNS) effects such as dizziness, weakness, fatigue, nausea, headache, and lack of coordination. Inhalation of high concentrations may cause cardiac sensitization leading to risk of arrhythmia (irregular heartbeat). Inhalation Irritation: High concentrations are moderately irritating to the eyes, nose, throat, and lungs. Skin Contact: Skin contact may cause moderate printitino consisting of transient redness and swelling. This irritant effect would not be expected to cocur from dermal contact. Eye Contact may cause moderate irritation consisting of transient redness, swelling, and mucous membrane discharge to the conjunctiva. No corneal involvement or visual impairment is expected. Ingestion Irritation: Ingestion may cause irritation of the gastrointestinal tract and gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting, lethargy or diarrhea. Ingestion Toxicity: Slightly toxic if swallowed. Acutef arget Organ Toxicity: Central nervous system, Heart, Eyes, Skin, Respiratory Tract, Mucous membranes Prolonged (Chronic) Health Effects Carcinogenicity: Central nervous system, Heart, Eyes, Skin, Respiratory Tract, Mucous membranes Prolonged (Chronic) Health Effects No reproductive or developmental risk to humans is expected from exposure to this product or a component of this product as a Group 3 substance, Unclassifiable as to its Carcinogenicity to Humans. Reproductive and Developmental Toxicity: No reproductive or develo	Xylene		20.0 ppm						
Xylene 100.0 - 200.0 ppm Hazardous Materials Identification System/National Fire Protection Association Classifications Hazard Raings: Health Flammability Reactivity NFPA Not established Inhalation Toxicity: Not expected to cause significant toxicity unless there is prolonged exposure to high concentrations. Inhalation of high concentrations may result in central nervous system (CNS) effects such as dizziness, weakness, fatigue, nausea, headache, and lack of coordination. Inhalation of high concentrations may cause cardiac sensitization leading to risk of arrhythmia (irregular heartbeat). Inhalation Irritation: High concentrations are moderately irritating to the eyes, nose, throat, and lungs. Skin Contact: Skin Contact: Skin contact may cause moderate irritation consisting of transient redness and sowelling. This irritant effect would not be expected to cecur from dermal contact. Eye Contact Contact may cause moderate irritation consisting of transient redness, swelling, and mucous membrane discharge to the conjunctiva. No corneal involvement or visual impairment is expected. Ingestion Irritation: Ingestion may cause irritation of the gastrointestinal tract and gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting, lethargy or diarrhea. Ingestion Toxicity: Slightly toxic if swallowed. AcuteTarget Organ Toxicity: Chernat nervous system, Heart, Eyes, Skin, Respiratory Tract, Mucous membranes Prolonged (Ch	Irritation Thre	shold:							
Hazardous Materials Identification System/National Fire Protection Association Classifications Hazard Ratings: HMIS Health 2* Flammability 3 Reactivity 0 Immediate (Acute) Health Effects Inhalation Toxicity: Not established Inhalation Toxicity: Not expected to cause significant toxicity unless there is prolonged exposure to high concentrations. Inhalation of high concentrations may result in central nervous system (CNS) effects such as dizziness, weakness, fatigue, nausea, headache, and lack of coordination. Inhalation of high concentrations may cause cardiac sensitization leading to risk of arrhythmia (irregular heartbeat). Inhalation Irritation: High concentrations are moderately irritating to the eyes, nose, throat, and lungs. Skin Contact: Skin contact may cause moderate irritation consisting of transient redness and swelling. This irritant effect would not be expected to result in permanent damage. Skin Absorption: No significant adverse effects to health would be expected to occur from dermal contact. Eye Contact Contact may cause irritation of the gastrointestinal tract and gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting, lethargy or diarrhea. Ingestion Trvitation: Ingestion Toxicity: Central nervous system, Heart, Eyes, Skin, Respiratory Tract, Mucous membranes Yolonged (Chronic) Health Effects The International Agency for Research on Cancer (IARC) has classified this product or a component of this product as a	Xylene		100.0 - 200.0 ppm						
Hazard Ratings: Health Flammability Reactivity HMIS 2* 3 0 NFPA Not established 0 immediate (Acute) Health Effects Inhalation Toxicity: Not established inmediate (Acute) Health Effects Inhalation of high concentrations. Inhalation of high concentrations may result in central nervous system (CNS) effects such as dizziness, weakness, fatigue, nausea, headache, and lack of coordination. Inhalation of high concentrations may cause cardiac sensitization leading to risk of arrhythmia (irregular heartbeat). Inhalation Irritation: High concentrations are moderately irritating to the eyes, nose, throat, and lungs. Skin Contact: Skin contact may cause moderate irritation consisting of transient redness and swelling. This irritant effect would not be expected to occur from dermal contact. Eye Contact Contact may cause moderate irritation consisting of transient redness, swelling, and mucous membrane discharge to the conjunctiva. No corneal involvement or visual impairment is expected. Ingestion Irritation: Ingestion may cause irritation of the gastrointestinal tract and gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting, lethargy or diarrhea. Ingestion Toxicity: Slightly toxic if swallowed. Acute Target Organ Toxicity: Chertal nervous system, Heart, Eyes, Skin, Respiratory Tract, Mucous memb	Hazardous Materi	ials Identif	ication System/N	ational F	Fire Protection	on Associat	ion Classifi	ications	
International Production International Product	Hazard Rat	ings.	Health	utionui i	Fla	mmability		Reactivity	
NFFA Not established Immediate (Acute) Health Effects Inhalation Toxicity: Not expected to cause significant toxicity unless there is prolonged exposure to high concentrations. Inhalation of high concentrations may result in central nervous system (CNS) effects such as dizziness, weakness, fatigue, nausea, headache, and lack of coordination. Inhalation Tritation: High concentrations are moderately irritating to the eyes, nose, throat, and lungs. Skin contact: Skin contact may cause moderate irritation consisting of transient redness and swelling. This irritant effect would not be expected to occur from dermal contact: Skin Absorption: No significant adverse effects to health would be expected to occur from dermal contact: Eye Contact Contact may cause moderate irritation consisting of transient redness, swelling, and mucous membrane discharge to the conjunctiva. No corneal involvement or visual impairment is expected. Ingestion Irritation: Ingestion may cause irritation of the gastrointestinal tract and gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting, lethargy or diarrhea. Polonged (Chronic) Health Effects The International Agency for Research on Cancer (IARC) has classified this product or a component of this product as a Group 3 substance, Unclassifiable as to Its Carcinogenicity to Humans. Reproductive and Developmental Toxicity: No reproductive or developmental risk to humans is expected from exposure to this product as a Group 3 substance, Unclassifiable as to Its Carcinogenic	HMI	S	2*		<u>- 10</u>	3		0	
mmediate (Acute) Health Effects Inhalation Toxicity: Not expected to cause significant toxicity unless there is prolonged exposure to high concentrations. Inhalation of high concentrations may result in central nervous system (CNS) effects such as dizziness, weakness, fatigue, nausea, headache, and lack of coordination. Inhalation of high concentrations may cause cardiac sensitization leading to risk of arrhythmia (irregular heartbeat). Inhalation Irritation: High concentrations are moderately irritating to the eyes, nose, throat, and lungs. Skin Contact: Skin contact may cause moderate irritation consisting of transient redness and swelling. This irritant effect would not be expected to occur from dermal contact. Eye Contact Contact may cause moderate irritation consisting of transient redness, swelling, and mucous membrane discharge to the conjunctiva. No corneal involvement or visual impairment is expected. Ingestion Irritation: Ingestion may cause irritation of the gastrointestinal tract and gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting, lethargy or diarrhea. Ingestion Toxicity: Slightly toxic if swallowed. AcuteTarget Organ Toxicity: Central nervous system, Heart, Eyes, Skin, Respiratory Tract, Mucous membranes Prolonged (Chronic) Health Effects The International Agency for Research on Cancer (IARC) has classified this product or a component of this product as a Group 3 substance, Unclassifiable as to Its Carcinogenicity to Humans. Reproductive and Developmental Toxicity: Nor reproductive or developmen	NFP	Ă	Not establis	shed		e.		Ū	
Immediate (Acute) Health Effects Inhalation Toxicity: Not expected to cause significant toxicity unless there is prolonged exposure to high concentrations. Inhalation of high concentrations may result in central nervous system (CNS) effects such as dizziness, weakness, fatigue, nausea, headache, and lack of coordination. Inhalation of high concentrations may cause cardiac sensitization leading to risk of arrhythmia (irregular heartbeat). Inhalation Irritation: High concentrations are moderately irritating to the eyes, nose, throat, and lungs. Skin Contact: Skin Contact: Skin contact may cause moderate irritation consisting of transient redness and swelling. This irritant effect would not be expected to result in permanent damage. Skin Absorption: No significant adverse effects to health would be expected to occur from dermal contact. Eye Contact Contact may cause moderate irritation consisting of transient redness, swelling, and mucous membrane discharge to the conjunctiva. No corneal involvement or visual impairment is expected. Ingestion Trvitation: Ingestion avy cause irritation of the gastrointestinal tract and gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting, lethargy or diarrhea. Ingestion Toxicity: Slightly toxic if swallowed. AcuteTarget Organ Toxicity: Central nervous system, Heart, Eyes, Skin, Respiratory Tract, Mucous membranes Prolonged (Chronic) Health Effects Dermal contact may cause defatting of skin and/or dermalitis. No reproducti									
Inhalation Toxicity: Not expected to cause significant toxicity unless there is prolonged exposure to high concentrations. Inhalation of high concentrations may result in central nervous system (CNS) effects such as dizziness, weakness, fatigue, nausea, headache, and lack of coordination. Inhalation Irritation: Inhalation of high concentrations may cause cardiac sensitization leading to risk of arrhythmia (irregular heartbeat). Inhalation Irritation: High concentrations are moderately irritating to the eyes, nose, throat, and lungs. Skin Contact: Skin contact may cause moderate irritation consisting of transient redness and swelling. This irritant effect would not be expected to result in permanent damage. Skin Absorption: No significant adverse effects to health would be expected to occur from dermal contact. Eye Contact Contact may cause irritation consisting of transient redness, swelling, and mucous membrane discharge to the conjunctiva. No corneal involvement or visual impairment is expected. Ingestion Irritation: Ingestion may cause irritation of the gastrointestinal tract and gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting, lethargy or diarrhea. Ingestion Toxicity: Slightly toxic if swallowed. AcuteTarget Organ Toxicity: Central nervous system, Heart, Eyes, Skin, Respiratory Tract, Mucous membranes Prolonged (Chronic) Health Effects Carcinogenicity: No reproductive or developmental risk to humans. Reproductive and Developm	Immediate (Acute	a) Health F	affects						
 Initial of Toxicity: For expected to class significant toxicity in these first constraints, halaktion of high concentrations in produce to system (CNS) effects such as dizziness, weakness, fatigue, nausea, headache, and lack of coordination. Inhalation of high concentrations may result in central nervous system (CNS) effects such as dizziness, weakness, fatigue, nausea, headache, and lack of coordination. Inhalation of high concentrations may cause cardiac sensitization leading to risk of arrhythmia (irregular heartbeat). Inhalation Irritation: High concentrations are moderate irritation consisting of transient redness and swelling. This irritant effect would not be expected to result in permanent damage. Skin Contact: Skin contact may cause moderate irritation consisting of transient redness, swelling, and mucous membrane discharge to the conjunctiva. No corneal involvement or visual impairment is expected. Ingestion Irritation: Ingestion may cause irritation of the gastrointestinal tract and gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting, lethargy or diarrhea. Ingestion Toxicity: Slightly toxic if swallowed. AcuteTarget Organ Toxicity: Central nervous system, Heart, Eyes, Skin, Respiratory Tract, Mucous membranes Prolonged (Chronic) Health Effects Carcinogenicity: The International Agency for Research on Cancer (IARC) has classified this product or a component of this product as a Group 3 substance, Unclassifiable as to Its Carcinogenicity to Humans. Reproductive and Developmental Toxicity: No reporductive or developmental risk to humans is expected from exposure to this product. Inhalation: Prolonged or repeated exposure may cause kidney, liver and blood damage. Skin Contact: Dermal contact may cause defating of skin and/or dermatitis. Skin Contact: Dermal contact may cause defating of skin and/or dermatitis. Skin	Inhalation Toxici	ity:	Not expected to c		aificant toxi	city unless t	there is prol	longed exposure t	0
Ingle concentrations influences, weakness, fatigue, nausea, headache, and lack of coordination. Inhalation of high concentrations may cause cardiac sensitization leading to risk of arrhythmia (irregular heartbeat). Inhalation Irritation: High concentrations are moderately irritating to the eyes, nose, throat, and lungs. Skin Contact: Skin contact may cause moderate irritation consisting of transient redness and swelling. This irritant effect would not be expected to result in permanent damage. Skin Absorption: No significant adverse effects to health would be expected to occur from dermal contact. Eye Contact Contact may cause moderate irritation consisting of transient redness, swelling, and mucous membrane discharge to the conjunctiva. No corneal involvement or visual impairment is expected. Ingestion Irritation: Ingestion may cause irritation of the gastrointestinal tract and gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting, lethargy or diarrhea. Ingestion Toxicity: Slightly toxic if swallowed. AcuteTarget Organ Toxicity: Central nervous system, Heart, Eyes, Skin, Respiratory Tract, Mucous membranes Prolonged (Chronic) Health Effects Carcinogenicity: Carcinogenicity: The International Agency for Research on Cancer (IARC) has classified this product as a Group 3 substance, Unclassifiable as to Its Carcinogenicity to Humans. Reproductive and Developmental Toxicity: No reproductive or developmental risk to humans is expected from exposure to this		Ity.	high concentratio	ause sigi ns Inhal	lation of hig	h concentra	tions may r	rouged exposure to result in central ne	orvous
by other (Cirk) beta beta beta beta beta beta beta beta		1	system (CNS) eff	ects such	actori of mgi	s weakness	s fatione n	ausea headache	and
Inhalation of high concentrations may cause cardiac sensitization leading to risk of arrhythmia (irregular heartbeat).Inhalation Irritation:High concentrations are moderately irritating to the eyes, nose, throat, and lungs. Skin Contact:Skin Contact:Skin contact may cause moderate irritation consisting of transient redness and swelling. This irritant effect would not be expected to occur from dermal contact.Eye ContactContact may cause moderate irritation consisting of transient redness, swelling, and mucous membrane discharge to the conjunctiva. No corneal involvement or visual impairment is expected.Ingestion Irritation:Ingestion may cause irritation of the gastrointestinal tract and gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting, lethargy or diarrhea.Ingestion Toxicity:Slightly toxic if swallowed.AcuteTarget Organ Toxicity:Central nervous system, Heart, Eyes, Skin, Respiratory Tract, Mucous membranesProlonged (Chronic) Health Effects Carcinogenicity:The International Agency for Research on Cancer (IARC) has classified this product or a component of this product as a Group 3 substance, Unclassifiable as to Its Carcinogenicity to Humans.Reproductive and Developmental Toxicity:No reproductive or developmental risk to humans is expected from exposure to this product.Inhalation:Prolonged or repeated exposure may cause kidney, liver and blood damage.Skin Contact:Dermal contact may cause defatting of skin and/or dermatitis.SkinThere are no known or reported effects from chronic exposure except for effects (if any) asimilar to those experienced from acute exposure.Chronic Target Organ Toxicity: </td <td></td> <td>Ì</td> <td>lack of coordinati</td> <td>on.</td> <td></td> <td>s, weakies</td> <td>, iaugue, ii</td> <td>uuseu, neuuuene, i</td> <td>unu</td>		Ì	lack of coordinati	on.		s, weakies	, iaugue, ii	uuseu, neuuuene, i	unu
arrhythmia (irregular heartbeat). Inhalation Irritation: High concentrations are moderately irritating to the eyes, nose, throat, and lungs. Skin Contact: Skin contact may cause moderate irritation consisting of transient redness and swelling. This irritant effect would not be expected to result in permanent damage. Skin Absorption: No significant adverse effects to health would be expected to occur from dermal contact. Eye Contact Contact may cause moderate irritation consisting of transient redness, swelling, and mucous membrane discharge to the conjunctiva. No corneal involvement or visual impairment is expected. Ingestion Irritation: Ingestion may cause irritation of the gastrointestinal tract and gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting, lethargy or diarrhea. Ingestion Toxicity: Slightly toxic if swallowed. AcuteTarget Organ Toxicity: Central nervous system, Heart, Eyes, Skin, Respiratory Tract, Mucous membranes Prolonged (Chronic) Health Effects The International Agency for Research on Cancer (IARC) has classified this product or a component of this product as a Group 3 substance, Unclassifiable as to Its Carcinogenicity to Humans. Reproductive and Developmental Toxicity: No reproductive or developmental risk to humans is expected from exposure to this product. Inhalation: Prolonged or repeated exposure may cause kidney, liver and blood damage. Skin Contact: Dermal contact may cause defating of skin]	Inhalation of high	n concent	trations may	cause card	iac sensitiza	ation leading to ri-	sk of
Inhalation Irritation: High concentrations are moderately irritating to the eyes, nose, throat, and lungs. Skin Contact: Skin contact may cause moderate irritation consisting of transient redness and swelling. This irritant effect would not be expected to result in permanent damage. Skin Absorption: No significant adverse effects to health would be expected to occur from dermal contact. Eye Contact Contact may cause moderate irritation consisting of transient redness, swelling, and mucous membrane discharge to the conjunctiva. No corneal involvement or visual impairment is expected. Ingestion Irritation: Ingestion may cause irritation of the gastrointestinal tract and gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting, lethargy or diarrhea. Ingestion Toxicity: Slightly toxic if swallowed. AcuteTarget Organ Toxicity: Central nervous system, Heart, Eyes, Skin, Respiratory Tract, Mucous membranes Prolonged (Chronic) Health Effects The International Agency for Research on Cancer (IARC) has classified this product or a component of this product as a Group 3 substance, Unclassifiable as to Its Carcinogenicity to Humans. Reproductive and Developmental Toxicity: No reproductive or developmental risk to humans is expected from exposure to this product. Inhalation: Prolonged or repeated exposure may cause kidney, liver and blood damage. Skin Contact: Dermal contact may cause defatting of skin and/or dermatitis. Skin		:	arrhythmia (irreg	ular hear	tbeat).			U	
Skin Contact: Skin contact may cause moderate irritation consisting of transient redness and swelling. This irritant effect would not be expected to result in permanent damage. Skin Absorption: No significant adverse effects to health would be expected to occur from dermal contact. Eye Contact Contact may cause moderate irritation consisting of transient redness, swelling, and muccous membrane discharge to the conjunctiva. No corneal involvement or visual impairment is expected. Ingestion Irritation: Ingestion may cause irritation of the gastrointestinal tract and gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting, lethargy or diarrhea. Ingestion Toxicity: Slightly toxic if swallowed. AcuteTarget Organ Toxicity: Central nervous system, Heart, Eyes, Skin, Respiratory Tract, Mucous membranes Prolonged (Chronic) Health Effects The International Agency for Research on Cancer (IARC) has classified this product or a component of this product as a Group 3 substance, Unclassifiable as to Its Carcinogenicity to Humans. Reproductive and Developmental Toxicity: No reproductive or developmental risk to humans is expected from exposure to this product. Inhalation: Prolonged or repeated exposure may cause kidney, liver and blood damage. Skin Dermal contact may cause defatting of skin and/or dermatitis. Skin There are no known or reported effects from chronic exposure except for effects (if any) Absorption: similar to those experi	Inhalation Irritati	ion:	High concentration	ons are m	noderately in	ritating to t	he eyes, nos	se, throat, and lun	gs.
Skin Absorption:swelling. This irritant effect would not be expected to result in permanent damage. No significant adverse effects to health would be expected to occur from dermal contact.Eye ContactContact may cause moderate irritation consisting of transient redness, swelling, and mucous membrane discharge to the conjunctiva. No corneal involvement or visual impairment is expected. Ingestion Irritation:Ingestion Irritation:Ingestion may cause irritation of the gastrointestinal tract and gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting, lethargy or diarrhea.Ingestion Toxicity:Slightly toxic if swallowed.AcuteTarget Organ Toxicity:Central nervous system, Heart, Eyes, Skin, Respiratory Tract, Mucous membranesProlonged (Chronic) Health Effects Carcinogenicity:The International Agency for Research on Cancer (IARC) has classified this product or a component of this product as a Group 3 substance, Unclassifiable as to Its Carcinogenicity to Humans.Reproductive and Developmental Toxicity:No reproductive or developmental risk to humans is expected from exposure to this product.Inhalation:Prolonged or repeated exposure may cause kidney, liver and blood damage.SkinDermal contact may cause defatting of skin and/or dermatitis.SkinThere are no known or reported effects from chronic exposure except for effects (if any) Absorption:Absorption:similar to those experienced from acute exposure.Ingestion:There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure.Chronic Target Organ Toxicity:Liver, Blood, Skin, Kidneys 	Skin Contact:		Skin contact may	cause m	oderate irrit	ation consis	sting of tran	sient redness and	
Skin Absorption: No significant adverse effects to health would be expected to occur from dermal contact. Eye Contact Contact may cause moderate irritation consisting of transient redness, swelling, and muccous membrane discharge to the conjunctiva. No corneal involvement or visual impairment is expected. Ingestion Irritation: Ingestion may cause irritation of the gastrointestinal tract and gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting, lethargy or diarrhea. Ingestion Toxicity: Slightly toxic if swallowed. AcuteTarget Organ Toxicity: Central nervous system, Heart, Eyes, Skin, Respiratory Tract, Mucous membranes Prolonged (Chronic) Health Effects The International Agency for Research on Cancer (IARC) has classified this product or a component of this product as a Group 3 substance, Unclassifiable as to Its Carcinogenicity to Humans. Reproductive and Developmental Toxicity: No reproductive or developmental risk to humans is expected from exposure to this product. Inhalation: Prolonged or repeated exposure may cause kidney, liver and blood damage. Skin There are no known or reported effects from chronic exposure except for effects (if any) Absorption: similar to those experienced from acute exposure. Ingestion: There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure. Chronic Target Organ Toxicity: Liver, Blood, Skin, Kidneys<		5	swelling. This in	ritant effe	ect would no	ot be expect	ed to result	in permanent dan	nage.
Eye Contactcontact.Eye ContactContact may cause moderate irritation consisting of transient redness, swelling, and mucous membrane discharge to the conjunctiva. No corneal involvement or visual impairment is expected.Ingestion Irritation:Ingestion may cause irritation of the gastrointestinal tract and gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting, lethargy or diarrhea.Ingestion Toxicity:Slightly toxic if swallowed.AcuteTarget Organ Toxicity:Central nervous system, Heart, Eyes, Skin, Respiratory Tract, Mucous membranesProlonged (Chronic) Health Effects Carcinogenicity:The International Agency for Research on Cancer (IARC) has classified this product or a component of this product as a Group 3 substance, Unclassifiable as to Its Carcinogenicity to Humans.Reproductive and Developmental Toxicity:No reproductive or developmental risk to humans is expected from exposure to this product.Inhalation:Prolonged or repeated exposure may cause kidney, liver and blood damage.SkinThere are no known or reported effects from chronic exposure except for effects (if any) Absorption:Absorption:similar to those experienced from acute exposure.Ingestion:There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure.Chronic Target Organ Toxicity:Liver, Blood, Skin, Kidneys No additional health information available.	Skin Absorption:	:]	No significant ad	verse eff	ects to healt	h would be	expected to	occur from derm	ıal
Eye Contact Contact may cause moderate irritation consisting of transient redness, swelling, and mucous membrane discharge to the conjunctiva. No corneal involvement or visual impairment is expected. Ingestion Irritation: Ingestion may cause irritation of the gastrointestinal tract and gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting, lethargy or diarrhea. Ingestion Toxicity: Slightly toxic if swallowed. AcuteTarget Organ Toxicity: Central nervous system, Heart, Eyes, Skin, Respiratory Tract, Mucous membranes Prolonged (Chronic) Health Effects The International Agency for Research on Cancer (IARC) has classified this product or a component of this product as a Group 3 substance, Unclassifiable as to Its Carcinogenicity to Humans. Reproductive and Developmental Toxicity: No reproductive or developmental risk to humans is expected from exposure to this product. Inhalation: Prolonged or repeated exposure may cause kidney, liver and blood damage. Skin There are no known or reported effects from chronic exposure except for effects (if any) Absorption: Absorption: Similar to those experienced from acute exposure. Ingestion: There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure. Chronic Target Organ Toxicity: Liver, Blood, Skin, Kidneys Supplemental Health Hazard Information: No additional health information available. </td <td></td> <td>(</td> <td>contact.</td> <td></td> <td></td> <td></td> <td>· ·</td> <td></td> <td></td>		(contact.				· ·		
Ingestion Irritation: Ingestion and inclusion of the gastrointestinal tract and gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting, lethargy or diarrhea. Ingestion Toxicity: Slightly toxic if swallowed. AcuteTarget Organ Toxicity: Central nervous system, Heart, Eyes, Skin, Respiratory Tract, Mucous membranes Prolonged (Chronic) Health Effects Carcinogenicity: The International Agency for Research on Cancer (IARC) has classified this product or a component of this product as a Group 3 substance, Unclassifiable as to Its Carcinogenicity to Humans. Reproductive and Developmental Toxicity: No reproductive or developmental risk to humans is expected from exposure to this product. Inhalation: Prolonged or repeated exposure may cause kidney, liver and blood damage. Skin Contact: Dermal contact may cause defatting of skin and/or dermatitis. Skin There are no known or reported effects from chronic exposure except for effects (if any) Absorption: similar to those experienced from acute exposure. Ingestion: There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure. Chronic Target Organ Toxicity: Liver, Blood, Skin, Kidneys Supplemental Health Hazard Information: No additional health information available.	Eye Contact	(Contact may caus	e modera	ate irritation	consisting	of transient	t redness, swelling	g, and
Ingestion Irritation: Ingestion may cause irritation of the gastrointestinal tract and gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting, lethargy or diarrhea. Ingestion Toxicity: Slightly toxic if swallowed. AcuteTarget Organ Toxicity: Central nervous system, Heart, Eyes, Skin, Respiratory Tract, Mucous membranes Prolonged (Chronic) Health Effects Carcinogenicity: The International Agency for Research on Cancer (IARC) has classified this product or a component of this product as a Group 3 substance, Unclassifiable as to Its Carcinogenicity to Humans. Reproductive and Developmental Toxicity: No reproductive or developmental risk to humans is expected from exposure to this product. Inhalation: Prolonged or repeated exposure may cause kidney, liver and blood damage. Skin Contact: Dermal contact may cause defatting of skin and/or dermatitis. Skin There are no known or reported effects from chronic exposure except for effects (if any) Absorption: similar to those experienced from acute exposure. Ingestion: There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure. Chronic Target Organ Toxicity: Liver, Blood, Skin, Kidneys Supplemental Health Hazard Information: No additional health information available.		1	mucous membrar	e discha	rge to the co	onjunctiva.	No corneal	involvement or vi	sual
Ingestion Irritation: Ingestion may cause irritation of the gastrointestinal tract and gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting, lethargy or diarrhea. Ingestion Toxicity: Slightly toxic if swallowed. AcuteTarget Organ Toxicity: Central nervous system, Heart, Eyes, Skin, Respiratory Tract, Mucous membranes Prolonged (Chronic) Health Effects Carcinogenicity: The International Agency for Research on Cancer (IARC) has classified this product or a component of this product as a Group 3 substance, Unclassifiable as to Its Carcinogenicity to Humans. Reproductive and Developmental Toxicity: No reproductive or developmental risk to humans is expected from exposure to this product. Inhalation: Prolonged or repeated exposure may cause kidney, liver and blood damage. Skin Contact: Dermal contact may cause defatting of skin and/or dermatitis. Skin There are no known or reported effects from chronic exposure except for effects (if any) Absorption: similar to those experienced from acute exposure. Ingestion: There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure. Chronic Target Organ Toxicity: Liver, Blood, Skin, Kidneys Supplemental Health Hazard Information: No additional health information available.	T	1	impairment is exp	pected.	tion of the o		1		
Ingestion Toxicity: Slightly toxic if swallowed. AcuteTarget Organ Toxicity: Central nervous system, Heart, Eyes, Skin, Respiratory Tract, Mucous membranes Prolonged (Chronic) Health Effects Carcinogenicity: The International Agency for Research on Cancer (IARC) has classified this product or a component of this product as a Group 3 substance, Unclassifiable as to Its Carcinogenicity to Humans. Reproductive and Developmental Toxicity: No reproductive or developmental risk to humans is expected from exposure to this product. Inhalation: Prolonged or repeated exposure may cause kidney, liver and blood damage. Skin Contact: Dermal contact may cause defatting of skin and/or dermatitis. Skin There are no known or reported effects from chronic exposure except for effects (if any) Absorption: similar to those experienced from acute exposure. Ingestion: There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure. Chronic Target Organ Toxicity: Liver, Blood, Skin, Kidneys Supplemental Health Hazard Information: No additional health information available.	Ingestion Irritatio	on:	Ingestion may cal	use irritat	tion of the g	astrointestii	nal tract and	a gastrointestinal	rau
Ingestion Toxicity: Slightly toxic if swallowed. AcuteTarget Organ Toxicity: Central nervous system, Heart, Eyes, Skin, Respiratory Tract, Mucous membranes Prolonged (Chronic) Health Effects Carcinogenicity: The International Agency for Research on Cancer (IARC) has classified this product or a component of this product as a Group 3 substance, Unclassifiable as to Its Carcinogenicity to Humans. Reproductive and Developmental Toxicity: No reproductive or developmental risk to humans is expected from exposure to this product. Inhalation: Prolonged or repeated exposure may cause kidney, liver and blood damage. Skin Contact: Dermal contact may cause defatting of skin and/or dermatitis. Skin There are no known or reported effects from chronic exposure except for effects (if any) Absorption: similar to those experienced from acute exposure. Ingestion: There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure. Chronic Target Organ Toxicity: Liver, Blood, Skin, Kidneys Supplemental Health Hazard Information: No additional health information available.		(or diarrhaa	iny or an	of the lono	wing sympt	oms: nause	a, voinning, ietha	rgy
AcuteTarget Organ Toxicity: Central nervous system, Heart, Eyes, Skin, Respiratory Tract, Mucous membranes Prolonged (Chronic) Health Effects The International Agency for Research on Cancer (IARC) has classified this product or a component of this product as a Group 3 substance, Unclassifiable as to Its Carcinogenicity to Humans. Reproductive and Developmental Toxicity: No reproductive or developmental risk to humans is expected from exposure to this product. Inhalation: Prolonged or repeated exposure may cause kidney, liver and blood damage. Skin Contact: Dermal contact may cause defatting of skin and/or dermatitis. Skin There are no known or reported effects from chronic exposure except for effects (if any) Absorption: similar to those experienced from acute exposure. Chronic Target Organ Toxicity: Chronic Target Organ Toxicity: Liver, Blood, Skin, Kidneys Supplemental Health Hazard Information: No additional health information available.	Indestion Toxicit	txz•	of diaffiea.	wallowe	d				
AcuteTarget Organ Toxicity:Central nervous system, Heart, Eyes, Skin, Respiratory Tract, Mucous membranesProlonged (Chronic) Health Effects Carcinogenicity:The International Agency for Research on Cancer (IARC) has classified this product or a component of this product as a Group 3 substance, Unclassifiable as to Its Carcinogenicity to Humans. No reproductive or developmental risk to humans is expected from exposure to this product.Inhalation:Prolonged or repeated exposure may cause kidney, liver and blood damage. Skin Contact:SkinDermal contact may cause defatting of skin and/or dermatitis. SkinSkinThere are no known or reported effects from chronic exposure except for effects (if any) asimilar to those experienced from acute exposure.Ingestion:There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure.Chronic Target Organ Toxicity:Liver, Blood, Skin, Kidneys No additional health information available.	ingestion roxien	.y.	Slightly toxic if s	wanowed	u.				
Prolonged (Chronic) Health Effects Carcinogenicity: The International Agency for Research on Cancer (IARC) has classified this product or a component of this product as a Group 3 substance, Unclassifiable as to Its Carcinogenicity to Humans. Reproductive and Developmental Toxicity: No reproductive or developmental risk to humans is expected from exposure to this product. Inhalation: Prolonged or repeated exposure may cause kidney, liver and blood damage. Skin Contact: Dermal contact may cause defatting of skin and/or dermatitis. Skin There are no known or reported effects from chronic exposure except for effects (if any) Absorption: similar to those experienced from acute exposure. Ingestion: There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure. Chronic Target Organ Toxicity: Liver, Blood, Skin, Kidneys Supplemental Health Hazard Information: No additional health information available.	AcuteTarget Org	an Toxicit	y: Central ner	vous syst	tem, Heart, I	Eyes, Skin,	Respiratory	y Tract, Mucous	
Prolonged (Chronic) Health Effects Carcinogenicity:The International Agency for Research on Cancer (IARC) has classified this product or a component of this product as a Group 3 substance, Unclassifiable as to Its Carcinogenicity to Humans. No reproductive or developmental risk to humans is expected from exposure to this product.Inhalation:Prolonged or repeated exposure may cause kidney, liver and blood damage. Skin Contact:Dermal contact may cause defatting of skin and/or dermatitis. SkinThere are no known or reported effects from chronic exposure except for effects (if any) Absorption:Absorption:similar to those experienced from acute exposure.Ingestion:There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure.Chronic Target Organ Toxicity:Liver, Blood, Skin, Kidneys No additional health information available.			membranes			-			
Carcinogenicity:The International Agency for Research on Cancer (IARC) has classified this product or a component of this product as a Group 3 substance, Unclassifiable as to Its Carcinogenicity to Humans.Reproductive and Developmental Toxicity:No reproductive or developmental risk to humans is expected from exposure to this product.Inhalation:Prolonged or repeated exposure may cause kidney, liver and blood damage.Skin Contact:Dermal contact may cause defatting of skin and/or dermatitis.SkinThere are no known or reported effects from chronic exposure except for effects (if any)Absorption:similar to those experienced from acute exposure.Ingestion:There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure.Chronic Target Organ Toxicity:Liver, Blood, Skin, Kidneys No additional health information available.	Prolonged (Chron	ia) Uaalth	Effects						
Careinogeneity.The international Agency for Research of Caneer (I/RCC) has classified this product or a component of this product as a Group 3 substance, Unclassifiable as to Its Carcinogenicity to Humans.Reproductive and Developmental Toxicity:No reproductive or developmental risk to humans is expected from exposure to this product.Inhalation:Prolonged or repeated exposure may cause kidney, liver and blood damage.Skin Contact:Dermal contact may cause defatting of skin and/or dermatitis.SkinThere are no known or reported effects from chronic exposure except for effects (if any)Absorption:similar to those experienced from acute exposure.Ingestion:There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure.Chronic Target Organ Toxicity:Liver, Blood, Skin, Kidneys No additional health information available.	Carcinogenicity:	nc) neath	Lilects	The Inte	ernational A	gency for R	esearch on	Cancer $(IARC)$ h	26
Reproductive and Developmental Toxicity:No reproductive or developmental risk to humans is expected from exposure to this product.Inhalation:Prolonged or repeated exposure may cause kidney, liver and blood damage.Skin Contact:Dermal contact may cause defatting of skin and/or dermatitis.SkinThere are no known or reported effects from chronic exposure except for effects (if any)Absorption:There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure.Chronic Target Organ Toxicity:Liver, Blood, Skin, Kidneys No additional health information available.	Careniogenieity.			classifie	d this produ	ict or a com	popent of t	his product as a G	as
Reproductive and Developmental Toxicity:No reproductive or developmental risk to humans is expected from exposure to this product.Inhalation:Prolonged or repeated exposure may cause kidney, liver and blood damage.Skin Contact:Dermal contact may cause defatting of skin and/or dermatitis.SkinThere are no known or reported effects from chronic exposure except for effects (if any)Absorption:similar to those experienced from acute exposure.Ingestion:There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure.Chronic Target Organ Toxicity:Liver, Blood, Skin, KidneysSupplemental Health Hazard Information:No additional health information available.				3 substa	nce Uncla	ssifiable as	to Its Carci	nogenicity to Hur	nans
Inhalation:Prolonged or repeated exposure may cause kidney, liver and blood damage.Skin Contact:Dermal contact may cause defatting of skin and/or dermatitis.SkinThere are no known or reported effects from chronic exposure except for effects (if any)Absorption:similar to those experienced from acute exposure.Ingestion:There are no known or reported effects from chronic ingestion except for effects similar to those experienced from acute exposure.Chronic Target Organ Toxicity:Liver, Blood, Skin, KidneysSupplemental Health Hazard Information:No additional health information available.	Reproductive and	d Developr	mental Toxicity	No repr	oductive or	developmer	tal risk to l	humans is expecte	nuns. ad
Inhalation:Prolonged or repeated exposure may cause kidney, liver and blood damage.Skin Contact:Dermal contact may cause defatting of skin and/or dermatitis.SkinThere are no known or reported effects from chronic exposure except for effects (if any)Absorption:similar to those experienced from acute exposure.Ingestion:There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure.Chronic Target Organ Toxicity:Liver, Blood, Skin, KidneysSupplemental Health Hazard Information:No additional health information available.	Reproductive and	1 Developi	nontur roxierty.	from ex	posure to th	is product.	itui iibk to i	iumans is expecte	<i>A</i>
Inhalation:Prolonged or repeated exposure may cause kidney, liver and blood damage.Skin Contact:Dermal contact may cause defatting of skin and/or dermatitis.SkinThere are no known or reported effects from chronic exposure except for effects (if any)Absorption:similar to those experienced from acute exposure.Ingestion:There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure.Chronic Target Organ Toxicity:Liver, Blood, Skin, KidneysSupplemental Health Hazard Information:No additional health information available.					1	1			
Skin Contact:Dermal contact may cause defatting of skin and/or dermatitis.SkinThere are no known or reported effects from chronic exposure except for effects (if any)Absorption:similar to those experienced from acute exposure.Ingestion:There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure.Chronic Target Organ Toxicity:Liver, Blood, Skin, KidneysSupplemental Health Hazard Information:No additional health information available.	Inhalation:	Р	rolonged or repea	ated expo	osure may ca	ause kidney	, liver and l	blood damage.	
SkinThere are no known or reported effects from chronic exposure except for effects (if any)Absorption:similar to those experienced from acute exposure.Ingestion:There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure.Chronic Target Organ Toxicity:Liver, Blood, Skin, KidneysSupplemental Health Hazard Information:No additional health information available.	Skin Contact:	Dermal co	ontact may cause	defatting	g of skin and	l/or dermati	tis.		
Absorption: similar to those experienced from acute exposure. Ingestion: There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure. Chronic Target Organ Toxicity: Liver, Blood, Skin, Kidneys Supplemental Health Hazard Information: No additional health information available.	Skin	There are	no known or rep	orted eff	ects from ch	ronic expo	sure except	for effects (if any)
Ingestion: There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure. Chronic Target Organ Toxicity: Liver, Blood, Skin, Kidneys Supplemental Health Hazard Information: No additional health information available.	Absorption:	similar to	those experience	d from a	cute exposu	re.			
those experienced from single exposure. Chronic Target Organ Toxicity: Liver, Blood, Skin, Kidneys Supplemental Health Hazard Information: No additional health information available.	Ingestion:	Ingestion: There are no known or reported effects from chronic ingestion except for effects similar to							
Chronic Target Organ Toxicity:Liver, Blood, Skin, KidneysSupplemental Health Hazard Information:No additional health information available.		those expe	erienced from sin	gle expo	sure.				
Supplemental Health Hazard Information: No additional health information available.	Chronic Torget Orgen Toxicity Liver Placed Skin Kidney								
Suppremental Health Hazard Information. 100 additional nearth information available.	Supplemental He	alth Hazar	rd Information	No	additional h	ealth inform	s nation avail	able	
	Sappiententui He	a.u. muzu	- mormuton.	1,01	accontinui III	- and morn	indion uvun		

IV. FIRST AID

Inhalation:	IF INHALED: Remove individual to fresh air. Seek medical attention if breathing becomes
	difficult.
Skin Contact:	IF ON SKIN: Immediately flush skin with plenty of water for 15 minutes. If clothing
	comes in contact with the product, the clothing should be removed immediately and
	laundered before re-use. Call a physician.
Eyes:	IF IN EYES: Immediately flush eyes with plenty of water for at least 15 minutes while
	holding eyelids apart. Call a physician immediately.
Ingestion:	IF SWALLOWED: Call a physician immediately. DO NOT induce vomiting unless
-	directed to do so by a physician. Never give anything by mouth to an unconscious person.

V. FIRE FIGHTING MEASURES

Flammability Summary (OSHA)	Flammable.
Flammable PropertiesFlash Point:Autoignition Temperature:	27 Deg. C. / 81 Deg. F. (Test Method: Tag Closed Cup) No data
Upper Flammable/Explosive Lin Lower Flammable/Explosive Lin	nit, % in air: 7 % nit, % in air: 1 %
Fire/Explosion Hazards:	Vapors may be ignited by sparks, flames or other sources of ignition if material is above the flash point giving rise to a flash fire. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can travel to a source of ignition and flash back.
Extinguishing Media:	Use alcohol resistant foam, carbon dioxide, dry chemical, or vaporizing liquid extinguishing agents. Water spray or fog may also be effective for extinguishing or to absorb heat and keep exposed material from being damaged by fire.
Fire Fighting Instructions:	Response to this material requires the use of a full encapsulated suit and full-face (NIOSH approved) self-contained breathing apparatus (SCBA). Use water to cool containers.
Hazardous Combustion Products	Oxides of nitrogen, carbon monoxide, carbon dioxide

VI. ACCIDENTAL RELEASE MEASURES

Personal Protection for Emergency Situations:	Additional protective clothing must be worn to prevent personal contact with this material. Those items include but are not limited to boots, impervious gloves, hard hat, splash-proof goggles, impervious clothing, i.e., chemically impermeable suit, self-contained breathing apparatus.
Spill Mitigation Procedures	
Air Release:	Hazardous concentrations in air may be found in local spill area and immediately downwind. Vapors may be suppressed by the use of water fog. Contain all liquid for treatment and/or disposal as a (potential) hazardous waste.
Water Release:	This material is lighter than water. This material is insoluble in water. Contain all liquid for treatment and/or disposal as a (potential) hazardous waste. Notify all downstream users of possible contamination. Divert water flow around spill if possible and safe to do so.
Land Release:	Create a dike or trench to contain materials. Absorb spill with inert material (e.g., dry sand, clay, earth or commercial absorbent), then place in a chemical waste container. Decontaminate all clothing and the spill area using a detergent

	and flush with large amounts of water. Contain all contaminated water for
	disposal and/or treatment.
Additional Spill Information:	Remove all sources of ignition. Stop source of spill as soon as possible and
-	notify appropriate personnel. Utilize emergency response personal protection
	equipment prior to the start of any response. Evacuate all non-essential
	personnel. Dispose of spill residues per guidelines under Section XIII, Disposal
	Consideration.

VII. HANDLING AND STORAGE

Handling:	Do not take internally. Avoid contact with skin, eyes and clothing.
	Upon contact with skin or eyes, wash off with water. Avoid breathing
	mist or vapor. Ground and bond containers when transferring material.
Storage:	Store in a cool dry ventilated location, away from sources of ignition
	or other incompatible conditions and chemicals. Keep container(s)
	closed. Do not expose to direct light.
	Outside or detached storage is preferred.
	Inside storage should be in a standard flammable liquids storage room
	or cabinet.
Shelf Life Limitations:	See label or certificate of analysis for shelf life if applicable.
Incompatible Materials for Storage:	Refer to Section X, "Incompatible Materials."
Do Not Store At temperatures Above:	25 Deg. C. 77 Deg. C.

VIII. EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation:	Local exhaust ventilation or other engineering controls are normally required when handling or using this product to keep exposure to airborne contaminants below the TLV, PEL, or other recommended exposure limit and/or maintain operator comfort. Use explosion-proof ventilation equipment when handling this product.			
Protective Equipment for F	Routine Use	of Product		
Respiratory Protection:	Wear a NI	OSH approved respirato	r if levels above the expos	ure limits are possible.
Respirator Type(s):	A NIOSH purifying or if expos	A NIOSH approved air purifying respirator with organic vapor cartridge. Air purifying respirators should not be used in oxygen deficient or IDLH atmospheres or if exposure concentrations exceed ten (10) times the published limit.		
Skin:	Wear imp	ervious gloves to avoid s	kin contact Follow good i	ndustrial hygiene
Skiii.	nractices			naustriai nygione
Eves	Use chemi	ical goggles		
Drotactive Clathing Type	Delyninyde	Ose chemical goggles.		
Frotective Clothing Type.	Polyethyle	ne and ethylene vinyl al	cohol copolymer such as 4	·H.
Exposure Limit Data				
CHEMICAL NAME	CAS #	OSHA PEL / STEL	ACGIH LIMITS	ACGIH WEEL
Xylenes (o-, m-, p- isomers)	1330-20-7	100 ppm TWA; 435 mg/m3	150 ppm STEL	Not Established
		TWA	100 ppm TWA	
Ethyl benzene	100-41-4	100 ppm TWA; 435 mg/m3	125 ppm STEL	Not Established
		TWA	100 ppm TWA	
CHEMICAL NAME Xylenes (o-, m-, p- isomers)	NIO 900 p	SH Immediately Dangero	ous to Life or Health:	
Ethyl benzene	800 ppm IDLH (10 percent lower explosive limit)			

IX. PHYSICAL DATA

Physical State:	clear Solution
Color:	yellow
Odor	aromatic
Molecular Weight:	Not Applicable/Mixture
pH	(@ 25 Deg. C) Not applicable
Octanol/Water Coeff:	No data
Solubility in Water:	nil
Bulk Density:	No data
Specific Gravity:	0.85 - 0.88
Vapor Density:	3.5 - 4.00 (air =1)
Vapor Pressure:	(@ 20 Deg. C) 10 mmHg
Evaporation Rate:	0.75 (n-Butyl acetate = 1)
Volatiles, % by vol.:	85 - 90 %
Boiling Point:	No data
Freezing Point:	No data

X. STABILITY AND REACTIVITY

Stability and Reactivity Summary:	Stable under normal conditions. Static discharge may cause ignition at temperatures at or above the flash point.		
Reactive Properties:	Flammable, Not sensitive to mechanical shock., Product is sensitive to electrical static discharge.		
Hazardous Polymerization:	Will not occur		
Conditions to Avoid:	High temperatures Temperatures above the flash point in combination with sparks, open flames, or other sources of ignition.		
Chemical Incompatibility:	strong oxidizing agents		
Hazardous Decomposition Products:	oxides of nitrogen, carbon dioxide, carbon monoxide		
Decomposition Temperature: Product May Be Unstable At Temperat	No data aures Above: <40 Deg. C. > 104 Deg. F.		

XI. TOXICOLOGICAL INFORMATION

Component Ani	<u>mal</u>	
Oral LD50 valu	ie:	
Benzene, dimet	thyl-	Oral LD50 Rat $= 4.3 \text{ g/kg}$
Dermal LD50 v	value:	
Benzene, dimet	thyl-	Dermal LD50 Rabbit $> 2 \text{ g/kg}$
Inhalation LC5	0 value:	
Benzene, dimet	thyl-	Inhalation LC50 (4h) Rat $= 6700$ ppm
Product Anima Oral LD50 valu Dermal LD50 v Skin Irritation: Eye Irritation:	l Toxicity ue: value:	Rat Believed to be 4 - 5 g/kg Rabbit Believed to be > 2 g/kg This material is expected to be moderately irritating. This material is expected to be moderately irritating.
Reproductive a Developmental	nd Toxicity:	This material at concentrations above the occupational exposure limits has caused developmental effects in animals. However, these effects were observed only at those doses that resulted in maternal toxicity.
Benzene	ent Data: , dimethyl-	This material at concentrations above the occupational exposure limits has caused developmental effects in animals. However, these effects were observed only at those doses that resulted in maternal toxicity. Industrial exposures kept at

or below occupational exposures standards should not pose a reproductive or developmental toxicity hazard. This material at concentrations above the occupational exposure limits has caused developmental effects in animals. However, these effects were observed only at those doses that resulted in maternal toxicity.
Not known or reported to be mutagenic.
This chemical has been shown to be non-mutagenic based on a battery of assays. This material has been shown to be non-mutagenic in the majority of a battery of assays. Not expected to be a mutagenic hazard.
This chemical is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP, or EPA.
The International Agency for Research on Cancer (IARC) has classified this product or a component of this product as a Group 3 substance, Unclassifiable as to Its Carcinogenicity to Humans.

XII. ECOLOGICAL INFORMATION

Ecological Toxicity Values:	
Benzene, dimethyl-	Fathead minnow, 96 hr. LC50: = 13.4 mg/l (flow-through).
	Rainbow trout (Salmo gairdneri) 96 hr. LC50: = 13.5 - 17.3 mg/l (nominal).
	Daphnia magna, 24 hr. LC50: = 150 mg/l (nominal, static).
	Bluegill 96 hr. LC50: $= 24.5 \text{ mg/l}$ (measured, static).
	Bluegill 96 hr. LC50: $= 15.7 \text{ mg/l}$ (measured, flow-through).
Benzene, ethyl-	Daphnia magna, 48 hr. LC50: = 75 mg/l (nominal, static).
	Fathead minnow, 96 hr. LC50: = 9.1 - 12.1 mg/l (measured, flow-through).

XIII. DISPOSAL CONSIDERATIONS

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

Waste Disposal Summary: Potential US EPA Waste Codes: Disposal Methods:	Spent or discarded material may be a hazardous waste. D001 As a hazardous liquid waste, it must be disposed of in accordance with local, state and federal regulations in a permitted hazardous waste treatment, storage and disposal facility by incineration	
Components subject to land ban rest	rictions: Xylenes (o-, m-, p- isomers) Ethyl benzene	

XIV. TRANSPORTATION INFORMATION

THIS MATERIAL IS F	REGULATED AS A DOT HAZARDOUS MATERIAL.
DOT Description (49 C	FR
Land (U.S. DOT):	HYDROCARBONS LIQUID, N.O.S. 3 UN3295 PGIII
Air (IATA/ICAO): Water (IMO):	HYDROCARBONS, LIQUID N.O.S., 3, UN3295, PG III HYDROCARBONS, LIQUID N.O.S., 3.3. UN3295, PG III Flash Point: (C) 27

Hazard Label/Placard:	(Primary)	FLAMMABLE
Xylenes (isomers and mixture)	final RQ = 100 Xylene (mixe	pounds (45.4 kg); also listed as Xylene; also listed as d); also listed as Benzene, dimethyl-
Ethyl benzene	final $RQ = 100$	0 pounds (454 kg)
Emergency Response Guide Number:	128	

XV. REGULATORY INFORMATION

UNITED STATES: Toxic Substances Control Ac	et (TSCA): The compone Existing Che	ents of this product are listed on the TSCA Inventory of mical Substances.
Pesticide acceptance indicati	on: US EPA Registration N	Number: Not applicable
Superfund Amendments and Hazard Categories Sections 3 Health: Physical:	Reauthorization Act (SAR 11/312 (40 CFR 370.2): Acute Chronic Fire	A) Title III:
Emergency Planning & Com	munity Right to Know (40	CFR 355, App. A):
Extremely Hazardous Substa Not applicable Reportable Quantity (40 CFI	nce Section 302 - Thresho	ld Planning Quantity:
Benzene, dimethyl-	,	final $RQ = 100$ pounds (45.4 kg)
Ethyl benzene		final $RQ = 1000$ pounds (454 kg)
Supplier Notification Require	ements (40 CFR 372.45), 3	13 Reportable Components
Xylene (mixed isomers)	form R reporting requ	ired for 1.0% de minimis concentration
Ethyl benzene	form R reporting requ	ired for 1.0% de minimis concentration
Clean Air Act Socmi:		Xylenes (nos) Ethyl benzene
Clean Air Act Organic HAP	40 CFR Section 61.01(b)	Xylenes (nos)
		Ethyl benzene
Clean Air Act VOC Section	111	Xylenes (nos)
Clean Air Act Haz. Air Pollutants Section 112		Ethyl benzene Xylenes (isomers and mixture) Ethyl benzene,
State Right-to-Know Regulat	ions Status of Ingredients	
Pennsylvania:	Benzene, dimethyl-	
	Benzene, ethyl-	
New Jersey:	Xylenes (o-, m-, p- isomer	rs)
	Ethyl benzene	
Massachusetts:	Xylene, Ethyl benzene	

XVI. ADDITIONAL INFORMATION

MSDS REVISION STATUS: Revised to meet the ANSI standard of 16 sections.

MAJOR REFERENCES:

- Shimizu, H. et al. 1985. The Results of Microbial Mutation Test for Forty-Three Industrial Chemicals. Jpn. J. Ind. Health. Vol. 27. pp. 400-419.
- Zeiger, E. et al. 1987. Salmonella Mutagenicity Tests: 3. Results from the Testing of 255 Chemicals. Environmental Mutagenesis. Journal of the Environmental Mutagen Society. Volume 9, Supplement 9:1-110. Alan R. Liss, Inc. NY.
- Criteria Document: Recommendations for an Occupational Exposure Standard for Xylene. 1975. U.S. Department of Health, Education, and Welfare. National Institute for Occupational Safety and Health. HEW Publication No. (NIOSH) 75-168.
- National Toxicology Program. Toxicology and Carcinogenesis Studies of Xylenes (Mixed) in F344/N Rats and B6C3F1 Mice. U. S. Department of Health and Human Services. Research Triangle Park, NC. 1986.

Other references available upon request.

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