

IMPAX 650RC HARDENER

This product appears in the following stock number(s):

2500H-5 2500U 2501U 2502U 2503U 2505U

Last revised: 07/09/03

Printed: 10/4/2004

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**Tradename:** IMPAX 650RC HARDENER**General use:** The following health hazard data pertain to the hardener only. When fully cured, the mixed product is non-hazardous.**Chemical family:** Modified Aliphatic Amine**MANUFACTURER**ITW Philadelphia Resins
130 Commerce Dr.
Montgomeryville, PA 18936**EMERGENCY INFORMATION****Emergency telephone number**
(CHEMTREC): (800) 424-9300
Other Calls: (215) 855-8450**2. COMPOSITION/INFORMATION ON INGREDIENTS****HAZARDOUS CONSTITUENTS****Exposure limits**

Constituent	Abbr.	CAS No.	Weight percent	ACGIH TLV	OSHA PEL	Other Limits
Benzyl alcohol	BZOH	100516	> 30	n/e	n/e	10 ppm (AIHA)
4, 4'-Methylenebiscyclohexanamine		1761713	< 5	n/e	n/e	n/e
Trimethylhexamethylenediamine		25620580	< 5	n/e	n/e	n/e
Isophorone diamine		2855132	< 10	n/e	n/e	n/e
Polyoxypropylenediamine		9046100	10-20	n/e	n/e	n/e
P-tertiarybutylphenol		98544	< 5	n/e	n/e	0.5 mg/m3 (DFG MAK)
Cycloaliphatic amine		*	< 40	n/e	n/e	n/e
Cycloaliphatic amine		*	< 15	n/e	n/e	n/e
Aliphatic Amine		*	< 5	n/e	n/e	n/e

"TLV" means the Threshold Limit Value exposure (eight-hour, time-weighted average, unless otherwise noted) established by the American Conference of Governmental Industrial Hygienists. "STEL" indicates a short-term exposure limit. "PEL" indicates the OSHA Permissible Exposure Limit. "n/e" indicates that no exposure limit has been established. An asterisk (*) indicates a substance whose identity is a trade secret of our supplier and unknown to us.

3. HAZARDS IDENTIFICATION**Emergency Overview**

Appearance, form, odor: Straw liquid with faint amine odor.

DANGER! Corrosive. Eye, skin and respiratory irritant. Potential skin sensitizer.

Potential health effects

Primary routes of exposure: Skin contact Skin absorption Eye contact Inhalation Ingestion

Symptoms of acute overexposure:

Skin: Corrosive. Severe irritation (defatting, itching, redness, blistering), pain, burns and permanent damage. Product is absorbed through the skin and may cause nausea, headache and general discomfort. Potential sensitizer.

Eyes: Corrosive. Severe irritation (redness, swelling), pain or burns; may cause permanent eye injury (including blindness). Vapors can cause lacrimation, conjunctivitis, and corneal edema.

Inhalation:

Corrosive. Can cause irritation of respiratory tract and mucous membranes (nasal discharge, coughing, discomfort). Over exposure to fumes or vapors may cause lung injury. May cause nausea and vomiting. Inhalation of vapors, aerosols and mists may severely damage contacted tissue and produce scarring.

Ingestion:

May cause burns of mouth, throat and stomach with abdominal and chest pain, nausea, vomiting, diarrhea, thirst, weakness and collapse.

Effects of chronic overexposure:

Repeated skin contact or inhalation may cause sensitization / dermatitis, with asthmatic or allergic symptoms on subsequent exposure (rash, defatting, nausea, headaches). Repeated or prolonged exposure may cause adverse respiratory effects (cough, tightness of chest, shortness of breath, dryness of nasal passages), eye effects (conjunctivitis, corneal damage), or skin effects (rash, irritation, corrosion). Repeated inhalation may cause lung damage.

Carcinogenicity -- OSHA regulated: No

ACGIH: No

National Toxicology Program: No

International Agency for Research on Cancer:No

Cancer-suspect constituent(s) : None

Medical conditions which may be aggravated by exposure:

May aggravate existing skin disorders and allergies, eye disease, and respiratory conditions (i.e. bronchitis, emphysema, inflammatory or fibrotic respiratory disease).

Other effects:

Corneal edema may give rise to a perception of "blue haze" or "fog" around lights which is transient and has no known residual effect.

4. FIRST AID MEASURES**First aid for eyes:**

Flush eye with clean water for at least 15 minutes while gently holding eyelids open. Get immediate medical attention.

First aid for skin:

Remove contaminated clothing and shoes. Wash thoroughly with soap and warm water. Consult a physician if irritation develops.

First aid for inhalation:

Remove patient to fresh air. Give oxygen or artificial respiration if needed. Prevent aspiration of vomit. Turn victims head to side. Seek medical advice.

First aid for ingestion:

Do NOT induce vomiting. Give large amounts of water or milk if conscious. Consult a physician. Never give anything by mouth to an unconscious person.

5. FIRE FIGHTING MEASURES**Extinguishing media:** Water Carbon dioxide Dry chemical Foam Alcohol foam**Flash Point (°F):** >200**Method:** estimate**Explosive limits in air (percent) -- Lower:** n/d**Upper:** n/d**Special firefighting procedures:**

Firefighters should wear self-contained breathing apparatus and full protective gear. Keep containers cool with water spray.

Unusual fire and explosion hazards:

Personnel in vicinity and downwind should be evacuated. Water or foam may cause frothing. Sudden reaction and fire may result if mixed with oxidizing agent.

Hazardous products of combustion:

Oxides of carbon, oxides of nitrogen, ammonia. Toxic smoke and vapors may form during combustion.

6. ACCIDENTAL RELEASE MEASURES**Spill control:**

Avoid personal contact. Eliminate ignition sources. Ventilate area.

Containment:

Dike, contain and absorb with clay, sand or other suitable material.

Cleanup:

For large spills, pump to storage/salvage vessels. Soak up residue with an absorbent such as clay, sand, or other suitable material and dispose of properly. Flush area with water to remove trace residue. Clean-up personnel must be equipped with self contained breathing apparatus and butyl rubber protective clothing.

Special procedures:

Prevent spill from entering drainage/sewer systems, waterways, and surface waters.

7. HANDLING AND STORAGE**Handling precautions:**

Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after using and particularly before eating, drinking, smoking, applying cosmetics, or using toilet facilities. Avoid breathing vapors. Handle in well ventilated work area.

Launder contaminated clothing and protective gear before reuse. Discard contaminated leather articles.

Handle mixed resin and hardener in accordance with the potential hazard of the curing agent used. Provide appropriate ventilation/respiratory protection against decomposition products (see Section 10) during welding/flame cutting operations and to protect against nuisance dust during sanding/grinding of cured product. Do not use sodium nitrite or other nitrosating agents in formulations containing this product, cancer-causing nitrosamines could be formed.

Storage:

Keep away from acids, alkalis and oxidizers. Store in a cool, dry, ventilated area in closed containers. Keep away from high temperatures (<100 F) and flames. Do not store in reactive metal containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls

Ventilation :

Local exhaust is recommended for prolonged or repeated use. Effective mechanical ventilation is adequate for occasional use.

Other engineering controls :

Have emergency shower and eye wash stations available.

Personal protective equipment

Eye and face protection:

Splash proof goggles and face shield.

Skin protection:

Chemical resistant rubber gloves and other protective clothing as required to prevent skin contact.

Respiratory protection:

None needed in normal use with proper ventilation. In poorly ventilated areas, use NIOSH approved organic vapor masks.

9. PHYSICAL AND CHEMICAL PROPERTIES

Specific gravity:	0.99	Boiling point (°F):	> 350
Melting point (°F):	n/d	Vapor density (air = 1):	>1
Vapor pressure (mmHg):	0.01 at 68 °F	Evaporation rate (butyl acetate = 1):	<1
VOC (grams/liter):	<10	Solubility in water:	Appreciable
Percent volatile by volume:	<1	pH (5% solution or slurry in water):	11.5
Percent solids by weight:	100		

10. STABILITY AND REACTIVITY

This material is chemically stable. Hazardous polymerization will not occur.

Conditions to avoid :

Extreme heat or open flame. Product slowly corrodes copper, aluminum, zinc and galvanized surfaces.

Incompatible materials:

Oxidizers, acids, reactive metals. Sodium or calcium hypochlorite. Nitrous acid, nitrites, nitrous oxide atm. Peroxides. Mat'ls reactive with hydroxyl cmpds. Alkalis. Reducers.

Hazardous products of decomposition:

Acrid and toxic fumes including organic amines, ammonia, oxides of nitrogen (highly toxic) and carbon, nitric acid, nitrosamines. Aldehydes. Ketones.

Conditions under which hazardous polymerization may occur:

Heat is generated when this hardener reacts with acids and epoxy resins. Mix only as instructed.

11. TOXICOLOGICAL INFORMATION

Acute oral effects: LD50 (rat): > 1000 mg/kg (estimate)

Acute dermal effects: LD50 (rabbit): > 1000 mg/kg (estimate)

Acute inhalation effects: LC50 (rat): Not available.

Exposure: hours.

Eye irritation:

Not available.

Subchronic effects:

Not available.

Carcinogenicity, teratogenicity, and mutagenicity:

Not available.

Other chronic effects:

Components have caused allergic sensitization in animals.

Toxicological information on hazardous chemical constituents of this product:

Constituent	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 4hr, (rat)
Benzyl alcohol	1230 mg/kg	2000 mg/kg	> 2000 ppm
4, 4'-Methylenebis(cyclohexanamine)	> 625 mg/kg	> 2110 mg/kg	>10 mg/l
Trimethylhexamethylenediamine	n/d	n/d	n/d
Isophorone diamine	1030 mg/kg	n/d	n/d
Polyoxypropylenediamine	480 - 1100 mg/kg	760 - 2090 mg/kg	n/d
P-tertiarybutylphenol	3250 uL/kg	2520 uL/kg	> 5600 mg/m3
Cycloaliphatic amine	n/d	n/d	n/d
Cycloaliphatic amine	n/d	n/d	n/d
Aliphatic Amine	n/d	n/d	n/d

'n/d' = 'not determined'

12 ECOLOGICAL INFORMATION**Ecotoxicity:**

Not available.

Mobility and persistence:

Not available.

Environmental fate:

Not available.

13. DISPOSAL CONSIDERATIONS

Please see also Section 15, Regulatory Information.

Waste management recommendations:

If this material becomes a waste, it would not be a hazardous waste by RCRA criteria (40CFR 261). Dispose of according to applicable federal, state, and local regulations.

14. TRANSPORT INFORMATION

Proper shipping name: Corrosive liquid, basic, organic, n.o.s.
Technical name : ISOPHORONEDIAMINE & POLYAMINES
Hazard class : 8
UN number: 3267
Packing group: III
Emergency Response Guide no.: 153
IMDG page number: N/A
Other:

15. REGULATORY INFORMATION**U.S. Federal Regulations****TSCA**

All ingredients of this product are listed, or are exempt from listing, on the TSCA inventory.

The following RCRA code(s) applies to this material if it becomes waste:

None

Regulatory status of hazardous chemical constituents of this product:

Constituent	Extremely Hazardous*	Toxic Chemical**	CERCLA RQ (lbs)	TSCA 12B Export Notification
Benzyl alcohol	No	No	0.0	Not required
4, 4'-Methylenebiscyclohexanamine	No	No	0.0	Not required
Trimethylhexamethylenediamine	No	No	0.0	Not required
Isophorone diamine	No	No	0.0	Not required
Polyoxypropylenediamine	No	No	0.0	Not required
P-tertiarybutylphenol	No	No	0.0	Not required
Cycloaliphatic amine	No	No	0.0	Not required

Constituent	Extremely Hazardous*	Toxic Chemical**	CERCLA RQ (lbs)	TSCA 12B Export Notification
Cycloaliphatic amine	No	No	0.0	Not required
Aliphatic Amine	No	No	0.0	Not required

*Consult the appropriate regulations for emergency planning and release reporting requirements for substances on the SARA Section 301 Extremely Hazardous Substance list.

**Substances for which the "Toxic Chemical" column is marked "Yes" are on the SARA Section 313 list of Toxic Chemicals, for which release reporting may be required. For specific requirements, consult the appropriate regulations.

For purposes of SARA Section 312 hazardous materials inventory reporting, the following hazard classes apply to this material: - Immediate health hazard -- Delayed health hazard -

Canadian regulations

WHMIS hazard class(es) : D2B; E

All components of this product are on the Domestic Substances List.

16. OTHER INFORMATION

Hazardous Materials Identification System (HMIS) ratings:	Health	Flammability	Reactivity
	3*	1	1

The information and recommendations in this document are based on the best information available to us at the time of preparation, but we make no other warranty, express or implied, as to its correctness or completeness, or as to the results of reliance on this document.

IMPAX 650 RC HAZE GRAY RESIN

This product appears in the following stock number(s):

2500R-5 2500U

Last revised: 09/08/04

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**Tradename:** IMPAX 650 RC HAZE GRAY RESIN**General use:** Product is a 100% solids, two-component, self-leveling epoxy floor coating. The following information applies to the resin component only.**Chemical family:** Epoxy resin**MANUFACTURER**ITW Philadelphia Resins
130 Commerce Dr.
Montgomeryville, PA 18936**EMERGENCY INFORMATION****Emergency telephone number**
(CHEMTREC): (800) 424-9300
Other Calls: (215) 855-8450**2. COMPOSITION/INFORMATION ON INGREDIENTS****HAZARDOUS CONSTITUENTS****Exposure limits**

Constituent	Abbr.	CAS No.	Weight percent	ACGIH TLV	OSHA PEL	Other Limits
Propylene carbonate		108327	1-10	n/e	n/e	n/e
Crystalline silica		14808607	20-40	0.05 mg/m ³	10/(%Q+2) mg	0.10 mg/m ³ (Canada)
Bisphenol A diglycidyl ether resin	DGEBPA	25068386	30-60	n/e	n/e	n/e
Epichlorohydrin/Bisphenol A Adduct		25085998	1-10	n/e	n/e	n/e
Butyrolactone	GBL	96480	1-10	n/e	n/e	n/e

"TLV" means the Threshold Limit Value exposure (eight-hour, time-weighted average, unless otherwise noted) established by the American Conference of Governmental Industrial Hygienists. "STEL" indicates a short-term exposure limit. "PEL" indicates the OSHA Permissible Exposure Limit. "n/e" indicates that no exposure limit has been established. An asterisk (*) indicates a substance whose identity is a trade secret of our supplier and unknown to us.

3. HAZARDS IDENTIFICATION**Emergency Overview**

Appearance, form, odor: viscous liquid with little odor.

WARNING! Eye and skin irritant. Potential skin sensitizer.

Potential health effects

Primary routes of exposure: Skin contact Skin absorption Eye contact Inhalation Ingestion

Symptoms of acute overexposure:

Skin: Moderate irritant. Contact at elevated temperatures can cause thermal burns. May cause skin sensitization (rashes, hives).

Eyes: Moderate to severe irritant. Contact at elevated temperatures can cause thermal burns.

Inhalation:

The low vapor pressure of the resin makes inhalation unlikely in normal use.

Ingestion:

Acute oral toxicity is low. May cause gastric distress.

Effects of chronic overexposure:

Prolonged or repeated skin contact may cause sensitization, with itching, swelling, or rashes on later exposure.

Carcinogenicity -- OSHA regulated: No

ACGIH: No

National Toxicology Program: Yes

International Agency for Research on Cancer: Yes

Cancer-suspect constituent(s) : Respirable crystalline silica

Medical conditions which may be aggravated by exposure:

Preexisting eye and skin disorders. Development of preexisting skin or lung allergy symptoms may increase.

Other effects:

Over exposure to "cyclic ester" is expected to cause symptoms of Central Nervous System depression. Also see section 11.

4. FIRST AID MEASURES**First aid for eyes:**

Flush eye with clean water for at least 15 minutes while gently holding eyelids open. Get immediate medical attention.

First aid for skin:

Immediately remove contaminated clothing and excess contaminant. Flush skin with water. Wash thoroughly with soap and warm water. Consult a physician if irritation develops.

First aid for inhalation:

Remove patient to fresh air. Administer oxygen if breathing is difficult. Get medical attention if symptoms persist.

First aid for ingestion:

Do NOT induce vomiting. Give two glasses of water to dilute if patient is conscious. Get medical attention.

Note to physician :

In general, emesis induction is unnecessary in high viscosity, low volatility products, e.g., neat epoxy resins.

5. FIRE FIGHTING MEASURES**Extinguishing media:**

Water

Carbon dioxide

Dry chemical

Foam

Alcohol foam

Flash Point (°F): >200

Method: estimate

Explosive limits in air (percent) -- Lower: n/d

Upper: n/d

Special firefighting procedures:

Material will not burn unless preheated. Do not enter confined space without full bunker gear. Firefighters should wear self-contained breathing apparatus and protective clothing. Cool fire exposed containers with water.

Unusual fire and explosion hazards:

Heat may rupture closed containers. Heating above 300 deg F in the presence of air may cause slow oxidative decomposition and above 500 deg F may cause polymerization. Vapors are heavier than air and may travel along floor to an ignition source.

Hazardous products of combustion:

When heated to decomposition it emits fumes of Cl⁻, carbon monoxide, other fumes and vapors varying in composition and toxicity.

6. ACCIDENTAL RELEASE MEASURES**Spill control:**

Avoid personal contact. Eliminate ignition sources. Ventilate area.

Containment:

Dike, contain and absorb with clay, sand or other suitable material.

Cleanup:

For large spills, pump to storage/salvage vessels. Soak up residue with an absorbent such as clay, sand, or other suitable material and dispose of properly. Flush area with water to remove trace residue.

Special procedures:

Prevent spill from entering drainage/sewer systems, waterways, and surface waters.

7. HANDLING AND STORAGE**Handling precautions:**

Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after using and particularly before eating, drinking, smoking, applying cosmetics, or using toilet facilities.

Laundry contaminated clothing and protective gear before reuse. Discard contaminated leather articles.

Handle mixed resin and hardener in accordance with the potential hazard of the curing agent used. Provide appropriate ventilation/respiratory protection against decomposition products (see Section 10) during welding/flame cutting operations and to protect against silica dust during sanding/grinding of cured product.

Storage:

Store in a cool, dry area away from high temperatures and flames.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Engineering controls****Ventilation :**

Local exhaust ventilation is preferred although good general mechanical ventilation is usually adequate for most industrial applications. Local exhaust is recommended for confined areas.

Other engineering controls :

Have emergency shower and eye wash available.

Personal protective equipment**Eye and face protection:**

Safety glasses with side shields or splash goggles.

Skin protection:

Chemical-resistant gloves and other gear as required to prevent skin contact.

Respiratory protection:

None required at normal handling temperatures and conditions. Use NIOSH approved organic vapor cartridges for uncured resin and dust/particle respirators during grinding/ sanding operations of cured resin as exposure levels dictate.

9. PHYSICAL AND CHEMICAL PROPERTIES

Specific gravity:	1.5	Boiling point (°F):	>400
Melting point (°F):	n/d	Vapor density (air = 1):	>1
Vapor pressure (mmHg):	n/d at 171 °F	Evaporation rate (butyl acetate = 1):	<<1
VOC (grams/liter):	< 25	Solubility in water:	Negligible
Percent volatile by volume:	0	pH (5% solution or slurry in water):	neutral
Percent solids by weight:	100		

10. STABILITY AND REACTIVITY

This material is chemically stable. Hazardous polymerization will not occur.

Conditions to avoid :

Open flame and extreme heat, oxidizing conditions.

Incompatible materials:

Strong Lewis or mineral acids, strong oxidizing agents, strong mineral and organic bases (especially primary and secondary aliphatic amines).

Hazardous products of decomposition:

Oxides of carbon; aldehydes, acids and other organic substances may be formed during combustion or elevated temperature (>500 deg F) degradation.

Conditions under which hazardous polymerization may occur:

Heat is generated when resin is mixed with curing agents; Run-a-way cure reactions may char and decompose the resin, generating unidentified fumes and vapors which may be toxic.

11. TOXICOLOGICAL INFORMATION

Acute oral effects: LD50 (rat): > 1000 mg/kg (estimate)

Acute dermal effects: LD50 (rabbit): n/d

Acute inhalation effects: LC50 (rat): n/d

Exposure: 8 hours.

Subchronic effects:

No data available.

Carcinogenicity, teratogenicity, and mutagenicity:

1) **MUTAGENICITY:** Liquid resins based on diglycidyl ether of Bisphenol A (DGEBPA), have proved to be inactive when tested by in vivo mutagenicity assays. These resins have shown activity in in vitro microbial mutagenicity screening and have produced chromosomal aberrations in cultured rat liver cells. The significance of these tests to man is unknown. 2) **CARCINOGENICITY:** Recent 2-year bioassays in rats and mice exposed by the dermal route to DGEBPA yielded no evidence of carcinogenicity to the skin or any other organs. This study clarifies prior equivocal results from a 2-year mouse skin painting study, which were suggestive, but not conclusive, for weak carcinogenic activity. 3) The International Agency for Research on Cancer (IARC) concluded that DGEBPA is not classifiable as a carcinogen (IARC group 3), that is human and animal evidence of carcinogenicity is inadequate.

Other chronic effects:

Prolonged or repeated skin contact may cause sensitization, with itching, swelling, or rashes on later exposure. Studies have shown bisphenol A diglycidyl ether resin to cause allergic contact dermatitis.

Toxicological information on hazardous chemical constituents of this product:

Constituent	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 4hr, (rat)
Propylene carbonate	29100 uL/kg	> 20 mL/kg	n/d
Crystalline silica	n/d	n/d	n/d
Bisphenol A diglycidyl ether resin	11.4 g/kg	>20 ml/kg	no deaths
Epichlorohydrin/Bisphenol A Adduct	n/d	n/d	n/d
Butyrolactone	> 1000 mg/kg	n/d	> 2.5 g/m ³

'n/d' = 'not determined'

12 ECOLOGICAL INFORMATION**Ecotoxicity:**

No data available.

Mobility and persistence:

No data available.

Environmental fate:

No data available.

13. DISPOSAL CONSIDERATIONS

Please see also Section 15, Regulatory Information.

Waste management recommendations:

If this resin becomes a waste, it would not be a hazardous waste by RCRA criteria (40CFR 261). Dispose of according to applicable federal, state, and local regulations.

14. TRANSPORT INFORMATION

Proper shipping name: Non-regulated

Technical name :

Hazard class : N/A

UN number:

Packing group:

Emergency Response Guide no.:

IMDG page number: N/A

Other:

15. REGULATORY INFORMATION**U.S. Federal Regulations****TSCA**

All ingredients of this product are listed, or are exempt from listing, on the TSCA inventory.

The following RCRA code(s) applies to this material if it becomes waste:

None

Regulatory status of hazardous chemical constituents of this product:

Constituent	Extremely Hazardous*	Toxic Chemical**	CERCLA RQ (lbs)	TSCA 12B Export Notification
Propylene carbonate	No	No	0.0	Not required
Crystalline silica	No	No	0.0	Not required
Bisphenol A diglycidyl ether resin	No	No	0.0	Not required
Epichlorohydrin/Bisphenol A Adduct	No	No	0.0	Not required
Butyrolactone	No	No	0.0	Not required

*Consult the appropriate regulations for emergency planning and release reporting requirements for substances on the SARA Section 301 Extremely Hazardous Substance list.

**Substances for which the "Toxic Chemical" column is marked "Yes" are on the SARA Section 313 list of Toxic Chemicals, for which release reporting may be required. For specific requirements, consult the appropriate regulations.

For purposes of SARA Section 312 hazardous materials inventory reporting, the following hazard classes apply to this material: - Immediate health hazard -- Delayed health hazard -**Canadian regulations****WHMIS hazard class(es) :** D2B

All components of this product are on the Domestic Substances List.

16. OTHER INFORMATION

Hazardous Materials Identification System (HMIS) ratings:	Health 2*	Flammability 1	Reactivity 1
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The information and recommendations in this document are based on the best information available to us at the time of preparation, but we make no other warranty, express or implied, as to its correctness or completeness, or as to the results of reliance on this document.