



Safety Data Sheet – Negative Resist NR71-3000P

1. Identification of Substance / Preparation and Company

Trade name:

Negative Resist NR71-3000P

Use of the substance/Preparation:

Industry sector: semiconductor industry photolithography sector
Type of use: light sensitive emulsion for photolithography applications

NOT FOR RECREATIONAL OR PERSONAL USE. NEVER CONSUME THIS PRODUCT.

Identification of the company:

Futurex, Inc.
24 Munsonhurst Rd
Franklin, NJ 07416 USA

Telephone no. 1-888-999-4188 from 8:00 am to 6:00 pm (EST)

Emergency telephone number: 1-800-535-5053 (U.S. and Canada)
1-352-323-3500 (International)

Person Responsible for SDS preparation:

Aga Rusin, e-mail: info@futurex.com

2. Hazards identification

GHS CLASSIFICATION:

HEALTH	ENVIROMENTAL	PHYSICAL
Acute Oral Toxicity: Category 4 Eye Irritation: Category 2A Skin Irritation: Category 2 Acute(Inhalation-Vapor): Category 4	Acute Toxicity: None Known Chronic Toxicity: None Known	None known

Contact:

Email: info@futurex.com
Website: www.futurex.com

FUTUREX, INC



Safety Data Sheet

Creation date: 06/09/2015
Last update: 01/25/2017

Safety Data Sheet – Negative Resist NR71-3000P

GHS LABEL:

SIGNAL WORD: Warning!



GHS07

HAZARD STATEMENTS	PRECAUTIONARY STATEMENTS
H 227 Combustible liquid and vapor H 302 Harmful if swallowed H 319 Causes eye irritation H 315 Causes skin irritation H 332 Harmful if inhaled	P 233 Keep container closed. P 261 Avoid breathing vapors. P 262 Do not get in eyes, on skin, or on clothing. P 270 Do not eat, drink or smoke when using this product. P 280 Wear protective gloves, protective clothing, eye protection, face protection. P 264 Wash hands thoroughly after handling. P 403+235 Keep container in a cool, well-ventilated area.

3. Composition/information on ingredients

CAS#	EINECS	Chemical Name	Concentration	Hazard symbols	R phrases*
96-48-0		Gamma-butyrolactone	60-65		
		Resins	30-35		
		Sensitizers	1-10		

4. First aid measures

Description of necessary measures according to routes of exposure

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical help.

Contact:

Email: info@futurex.com

Website: www.futurex.com

FUTUREX, INC

Negative Resist NR71-3000P

Page 2 of 9



Safety Data Sheet – *Negative Resist NR71-3000P*

Skin: Immediately wash with soap and water. Seek medical assistance for irritation or any other symptoms.

Ingestion: Do not induce vomiting unless advised to do so by a physician.

Inhalation: Remove to fresh air. If not breathing, apply artificial respiration, preferably mouth-to-mouth. Get medical assistance.

Notes to Physician: Treat according to symptoms present.

5. Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Combustible liquid and vapor. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas.

Extinguishing Media: Alcohol foam, carbon dioxide, dry chemical, or water spray. Avoid solid streams of water which may spread burning liquid.

Flash Point: 98 °C (208 °F)

Auto-Ignition Temperature: 455 °C

Explosion Limits, Lower: 3.6 vol %

Upper: 16 vol %

NFPA Rating: (estimated) Health: 2; Flammability: 1; Instability: 0

Flammability Conditions

This product is a combustible liquid with regard to AS 1940. Actual autoignition temperature (AIT) can be affected by the concentration of vapors and oxygen, vapors and oxygen, vapor/air contact time, pressure, volume, catalytic impurities, etc. Process conditions should be analyzed to determine if the AIT's may be higher or lower. Vapor forms explosive mixture with air. Hazardous gases/vapors produced in fire are carbon monoxide.

6. Accidental release measures

Contact:

Email: info@futurex.com

Website: www.futurex.com

FUTUREX, INC

Negative Resist NR71-3000P

Page 3 of 9



Safety Data Sheet – *Negative Resist NR71-3000P*

Emergency procedures

Clean-up personnel should wear full protective clothing including breathing apparatus. Remove source of heat, sparks, flame, impact, friction or electricity. Dike spill. Prevent material from entering sewers, waterways, or low areas. Provide ventilation.

Methods and materials for containment and clean up

Recover free liquid for reuse or reclamation. Recover undamaged and minimally contaminated material for reuse and reclamation. Soak up with sawdust, sand, oil, dry or other absorbent material.

7. Handling and Storage

Precautions for safe handling

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Use with adequate ventilation. Keep away from heat and flame.

Conditions for safe storage, including any incompatibles

This product is a combustible liquid with regard to AS 1940. Storage should be in accordance with applicable commonwealth, state or territory regulation. Do not mix with strong oxidizing agents. Store in a well-ventilated place. Keep container tightly closed. Avoid breathing vapors or mist. Avoid contact with eyes, skin or clothing. Wash thoroughly after handling.

8. Exposure Controls, Personal Protection

National Exposure Standards

No data available

Biological Limit Values

No Data Available

Engineering Controls

Use sufficient ventilation to keep employee exposures below recommended limits.

Personal Protection

Contact:

Email: info@futurex.com

Website: www.futurex.com

FUTUREX, INC

Negative Resist NR71-3000P

Page 4 of 9



Safety Data Sheet – *Negative Resist NR71-3000P*

Eyes: Wear chemical splash goggles.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

9. Physical and Chemical Properties

Physical State	liquid
Color	yellow
Odor	faint, specific
Odor Threshold	Not available
pH	Not available
Melting Point	-44 °C
Boiling Point	204 °C
Flash Point	98 °C
Evaporation Rate	No data available
Flammability	Non-flammable liquid
Flammability Limits (as percentage volume in air)	
Lower Explosion Limit	3.6%
Upper Explosion Limit	16%
Vapor Pressure	1.5 mmHg (20 °C)
Vapor Density	>3 (air=1)
Specific Gravity/Relative Density	1.13 (Water = 1)
Solubility in water	Not available
Partition coefficient: n-octanol/water	Not available
Auto-ignition temperature	455 °C (at 760 mmHg)
Decomposition temperature	Not available
Viscosity	210 – 230 cSt (at T=23°C)

10. Stability and reactivity

Contact:

Email: info@futurex.com

Website: www.futurex.com

FUTUREX, INC

Negative Resist NR71-3000P

Page 5 of 9



Safety Data Sheet – *Negative Resist NR71-3000P*

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions.

Conditions to Avoid: Ignition sources, moisture, excess heat.

Incompatibilities with Other Materials: Strong oxidizing agents

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide

Hazardous Polymerization: Will not occur.

11. Toxicological information

Light yellow liquid with a faint odor. Causes irritation to the skin, eyes, mucous membranes and respiratory tract. Can be absorbed through the skin causing systemic effects. Liquid is combustible.

Toxicity Data

Skin: Can be absorbed through the skin causing systemic effects similar to inhalation. Prolonged or repeated contact may cause mild to moderate irritation or dermatitis.

Eyes: Causes eye irritation.

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation. Vapors may cause drowsiness and dizziness.

Ingestion: Harmful if swallowed.

Delayed effects: Liver and kidney damage, and blood and bone marrow effects have been reported in animals.

Immediate (acute) effects:

LD50 (oral-rat): 1540 mg/kg

LD50 (inhalation-rat): >5100 mg/L 4 hr

LD50 (skin-guinea pig): >5000 mg/kg

Other data: None.

12. Ecological Information

Aquatic Toxicity

Breakdown via chemical, photochemical and microbial degradation in natural environment. Generally not degraded by hydrolysis. 300 ppm is safe for aquatic life. Halogenation may occur in aqueous environment.

13. Disposal considerations

Contact:

Email: info@futurex.com

Website: www.futurex.com

FUTUREX, INC

Negative Resist NR71-3000P

Page 6 of 9



Safety Data Sheet

Creation date: 06/09/2015
Last update: 01/25/2017

Safety Data Sheet – Negative Resist NR71-3000P

DISPOSAL METHODS

Dispose of waste and residues in accordance with local authority requirements. Unused product is a RCRA hazardous waste with numbers U057 and D001.

OTHER DISPOSAL CONSIDERATIONS:

40 CFR Section 268 should be consulted for federal regulatory requirement.

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

14. Transport information

	US DOT
Shipping Name:	Not regulated
Hazard Class:	
UN Number:	
Packing Group:	
Marine Pollutant	

	IATA
Shipping Name:	Not regulated
Hazard Class:	
UN Number:	
Packing Group:	
Marine Pollutant	

	RID/ADR
--	---------

15. Regulatory information

Labeling	Hazard Class:		in accordance with Globally Harmonized System of Classification and of Chemicals (GHS)
	UN Number:		
Labeling	Packing Group:		
	Hazard Label		
	Marine Pollutant		

Contact:

Email: info@futurex.com

Website: www.futurex.com

FUTUREX, INC

Negative Resist NR71-3000P

Page 7 of 9



Safety Data Sheet – *Negative Resist NR71-3000P*

Hazardous component(s) to be indicated on label

R phrases

R 10 Flammable.

S phrases

S 16 Keep away from sources of ignition - No smoking.
S 24 Avoid contact with skin.
S 33 Take precautionary measures against static discharges.
S 9 Keep container in a well-ventilated place.

US FEDERAL

TSCA

Ingredients are listed on the TSCA inventory.

OSHA

None of the chemicals in this product are considered highly hazardous by OSHA.

Health & Safety Reporting List

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

Chemical Test Rules

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

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

γ-butyrolactone: 5000 lbs.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

California Proposition 65

This product does not contain any Proposition 65 chemicals.

FOREIGN INVENTORY STATUS:

WHMIS Classification (Canada)

B3, D1B, D2B.

Disclosure List Item Number 467.

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

Canadian DSL (Domestic Substance List)

EINECS (European Inventory of Existing Commercial Chemical Substances)

No date available

16. Other information

Contact:

Email: info@futurex.com

Website: www.futurex.com

FUTUREX, INC

Negative Resist NR71-3000P

Page 8 of 9



FUTUREX, INC.
Productivity Tools

Safety Data Sheet

Creation date: 06/09/2015
Last update: 01/25/2017

Safety Data Sheet – *Negative Resist NR71-3000P*

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 1

Reactivity: 0

Personal Protection: h

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

Health: 1

Flammability: 1

Reactivity: 0

Alterations/supplements to the previous editions:

General update

References:

[1] Globally Harmonized System of Classification and Labeling of Chemicals (GHS), Fourth revised edition, UNITED NATIONS, New York and Geneva, 2011

Sources of key data used to compile the datasheet

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Futurrex be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Futurrex has been advised of the possibility of such damages.

Contact:

Email: info@futurrex.com

Website: www.futurrex.com

FUTUREX, INC

Negative Resist NR71-3000P

Page 9 of 9