Material Safety Data Sheet

NeoCryl A-622

Section 1. Chemical product and company identification

Product name : NeoCryl A-622

Supplier : DSM NeoResins+, Inc.
730 Main Street
Wilmington, MA 01887
USA
Telephone : +1 (978) 658-6600

Chemical formula : Not applicable.

Material uses : Resin used in the production of coatings, inks and/or adhesives.

Emergency telephone number : 800-424-9300 Medical Emergency

For chemical emergency, spill, leak, fire, exposure or accident: call CHEMTREC day or night. DOMESTIC NORTH AMERICA 800-424-9300; INTERNATIONAL, CALL 703-527-3887 (collect calls accepted)

e-mail address of person responsible for this SDS : DSMRESINS.SDS@dsm.com (Communication in English only please)

Section 2. Hazards identification

Physical state : Liquid.

Odor : mild ammonia.

Emergency overview : WARNING!

HARMFUL IF SWALLOWED. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. POSSIBLE BIRTH DEFECT HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE BIRTH DEFECTS, BASED ON ANIMAL DATA. POSSIBLE REPRODUCTIVE HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE ADVERSE REPRODUCTIVE EFFECTS IN MALES, BASED ON ANIMAL DATA.

Harmful if swallowed. Irritating to eyes, respiratory system and skin. Avoid exposure - obtain special instructions before use. Do not breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. Contains material that may cause target organ damage, based on animal data. Contains material which may cause birth defects, based on animal data. Avoid exposure during pregnancy. Contains material which may impair male fertility, based on animal data. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Hazardous Material Information System (U.S.A.)

Health	2
Flammability	1
Physical hazards	0
PERSONAL PROTECTION	

The PPE (Personal Protection Equipment) designation in the HMIS is provided for use by employees at supplier sites only. Other users of this product are encouraged to evaluate the hazards of the product and assign PPE that is applicable to their specific situations.

Potential acute health effects

Inhalation : Irritating to respiratory system.

Ingestion : Toxic if swallowed.

Skin : Irritating to skin.

Eyes : Irritating to eyes.

Potential chronic health effects

Chronic effects : Contains material that may cause target organ damage, based on animal data.

Continued on next page

Carcinogenicity	:	No known significant effects or critical hazards.
Mutagenicity	:	No known significant effects or critical hazards.
Teratogenicity	:	Contains material which may cause birth defects, based on animal data.
Developmental effects	:	No known significant effects or critical hazards.
Fertility effects	:	Contains material which may impair male fertility, based on animal data.
Target organs	:	Contains material which may cause damage to the following organs: blood, kidneys, liver, lymphatic system, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea, nose/sinuses.
Medical conditions aggravated by over-exposure	:	Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (Section 11)

Section 3. Composition/information on ingredients

Name	CAS number	% by weight
2-butoxyethanol	111-76-2	10 - 50
Butyl benzyl phthalate	85-68-7	1- 10
styrene	100-42-5	0.01 - 0.1

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Section 4. First aid measures

Eye contact	:	Rinse with plenty of running water. Get medical attention if symptoms occur.
Skin contact	:	Take off immediately all contaminated clothing. Wash with soap and water. Get medical attention.
Inhalation	:	If inhaled, remove to fresh air. Prevent cooling of the person. Keep victim at rest in half-upright position. If not breathing, give artificial respiration. Get medical attention.
Ingestion	:	If swallowed, rinse mouth with water (only if the person is conscious). Seek medical attention.
Protection of first-aiders	:	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
Notes to physician	:	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Section 5. Fire-fighting measures

Flammability of the product	:	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	:	In case of fire, may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, (dense) black smoke, aldehydes, organic acids.
Extinguishing media		
Suitable	:	Use water, foam or dry chemical powder.
Special fire-fighting procedures	:	Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Protection of fire-fighters	:	Wear suitable protective clothing. Self-contained breathing apparatus.
Remarks	:	The material will not support combustion unless the water has evaporated.

Continued on next page

Section 6. Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : Prevent entry into sewers, basements or confined areas. Dike if necessary. In case of contamination of aquatic environment, inform local authorities.

Methods for cleaning up : Prevent entry into sewers, basements or confined areas. Dike if necessary. Absorb spill with inert material (e.g. dry sand or earth) and place in a chemical waste container. Recycle, if possible. Avoid release to the environment. This material and its container must be disposed of as hazardous waste. Keep away from sources of ignition.

Section 7. Handling and storage

Handling : Use in closed systems. Avoid contact with eyes, skin and clothing. Do not allow to enter drains or watercourses.

Storage : Store in a fireproof location. Keep away from incompatibles such as flammable substances, oxidizing substances and corrosive substances. Keep away from incompatible materials and avoid specific conditions (See section 10). Use appropriate containment to avoid environmental contamination. Keep away from heat and direct sunlight. Sensitive to frost.

Storage temperature : Store between the following temperatures: 5 and 40 °C.

Section 8. Exposure controls/personal protection

Engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Personal protection

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Product name	Exposure limits
2-butoxyethanol	**OSHA PEL 1989 (United States, 3/1989). Absorbed through skin.** TWA: 25 ppm 8 hours. TWA: 120 mg/m³ 8 hours. **NIOSH REL (United States, 6/2009). Absorbed through skin.** TWA: 5 ppm 10 hours. TWA: 24 mg/m³ 10 hours. **ACGIH TLV (United States, 3/2012).** TWA: 20 ppm 8 hours. **OSHA PEL (United States, 6/2010). Absorbed through skin.** TWA: 50 ppm 8 hours. TWA: 240 mg/m³ 8 hours.
styrene	**ACGIH TLV (United States, 3/2012).** TWA: 20 ppm 8 hours. TWA: 85 mg/m³ 8 hours.

Continued on next page

STEL: 40 ppm 15 minutes.
STEL: 170 mg/m³ 15 minutes.

OSHA PEL 1989 (United States, 3/1989).
TWA: 50 ppm 8 hours.
TWA: 215 mg/m³ 8 hours.
STEL: 100 ppm 15 minutes.
STEL: 425 mg/m³ 15 minutes.

OSHA PEL Z2 (United States, 11/2006).
TWA: 100 ppm 8 hours.
CEIL: 200 ppm
AMP: 600 ppm 5 minutes.

NIOSH REL (United States, 6/2009).
TWA: 50 ppm 10 hours.
TWA: 215 mg/m³ 10 hours.
STEL: 100 ppm 15 minutes.
STEL: 425 mg/m³ 15 minutes.

Consult local authorities for acceptable exposure limits.

Remarks : If respiratory protection is needed, use a NIOSH certified respirator with an Assigned Protection Factor (APF) of at least 10.

Section 9. Physical and chemical properties

Physical state : Liquid.

Flash point : Closed cup: >100°C (>212°F) [(estimate)] [Product does not sustain combustion.]

Color : Milky white.

Odor : mild ammonia.

pH : 7.7 to 8.3

Boiling point : 100°C (212°F)

Specific gravity : 1.03

Vapor pressure : 2.3 kPa (17.251 mm Hg) [room temperature]

Solubility : Partially soluble in the following materials: cold water and hot water.

Remarks : Miscible in water.

Section 10. Stability and reactivity

Stability and reactivity : The product is stable.

Conditions to avoid : Keep away from heat, sparks and flame.

Materials to avoid : No special recommendations.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Section 11. Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Butyl benzyl phthalate	LC50 Inhalation Dusts and mists	Rat	>6.7 mg/l	4 hours
	LD50 Dermal	Rabbit	>10000 mg/kg	-
	LD50 Dermal	Rat	6700 mg/kg	-
	LD50 Oral	Rat	2330 mg/kg	-
2-butoxyethanol	LD50 Oral	Rat - Male	1746 mg/kg	-
styrene	LC50 Inhalation Vapor	Rat	12 g/m³	4 hours
	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-

Conclusion/Summary : Not available.

Chronic toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2-butoxyethanol	Sub-chronic NOAEL Oral	Rat	<69 mg/kg	91 days

Continued on next page

Conclusion/Summary : Not available.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Butyl benzyl phthalate	Eyes - Mild irritant	Rabbit	-	24 hours	-
2-butoxyethanol	Skin - Erythema/Eschar	Rabbit	2	-	-
	Eyes - Cornea opacity	Rabbit	0.89	-	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Severe irritant	Rabbit	-	100 milligrams	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-
styrene	Respiratory - Irritant	Mammal - species unspecified	-	-	-

Conclusion/Summary : Not available.

Sensitizer

Product/ingredient name	Route of exposure	Species	Result
2-butoxyethanol	skin	Guinea pig	Not sensitizing

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
2-butoxyethanol	A3	3	-	-	-	-
Butyl benzyl phthalate	-	3	-	-	-	-
styrene	A4	2B	-	-	Reasonably anticipated to be a human carcinogen.	-

Mutagenicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Section 12. Ecological information

Ecotoxicity : No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
Butyl benzyl phthalate	Acute EC50 2390 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 100 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute EC50 >900 µg/l Fresh water	Crustaceans - Americamysis bahia	48 hours
	Acute EC50 1000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 510 µg/l Marine water	Fish - Cymatogaster aggregata - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
	Chronic NOEC 0.26 mg/l Fresh water	Daphnia - Daphnia magna	21 days
2-butoxyethanol	NOEC 100 mg/l	Daphnia	21 days
	NOEC >100 mg/l	Fish	21 days
	Acute EC50 911 mg/l	Algae	72 hours
	Acute EC50 1800 mg/l	Daphnia	48 hours
	Acute LC50 800000 µg/l Marine water	Crustaceans - Crangon crangon	48 hours
	Acute LC50 1474 mg/l	Fish	96 hours

Continued on next page

styrene	Acute LC50 1490 mg/l Fresh water Acute LC50 1250000 µg/l Marine water Acute NOEC 88 mg/l Acute EC50 4.9 mg/l Acute EC50 4.7 mg/l Acute LC50 4.02 mg/l Chronic NOEC 1.01 mg/l	Fish - Lepomis macrochirus Fish - Menidia beryllina Algae Algae Daphnia Fish Daphnia	96 hours 96 hours 72 hours 72 hours 48 hours 96 hours 21 days

Conclusion/Summary : Not available.

Persistence/degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Butyl benzyl phthalate	OECD 301C Ready Biodegradability - Modified MITI Test (I)	81 % - 28 days	-	-
2-butoxyethanol	OECD 301B Ready Biodegradability - CO_2 Evolution Test	90 % - Readily - 28 days	-	-

Conclusion/Summary : Not available.

Section 13. Disposal considerations

Waste disposal : Waste must be disposed of in accordance with national and local environmental regulations.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Consult your local or regional authorities.

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	Not regulated.	-	-	-		-
TDG Classification	Not regulated.	-	-	-		-
Mexico Classification	Not regulated.	-	-	-		-
ADR/RID Class	Not regulated.	-	-	-		-
IMDG Class	Not regulated.	-	-	-		-
IATA-DGR Class	Not regulated.	-	-	-		-

PG* : Packing group

Special precautions for user **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Continued on next page

Section 15. Regulatory information

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	2-butoxyethanol	111-76-2	10.254
Supplier notification	2-butoxyethanol	111-76-2	10.254

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State regulations : **Connecticut Carcinogen Reporting**: None of the components are listed.
Connecticut Hazardous Material Survey: None of the components are listed.
Florida substances: The following components are listed: 2-butoxyethanol
Illinois Chemical Safety Act: None of the components are listed.
Illinois Toxic Substances Disclosure to Employee Act: None of the components are listed.
Louisiana Reporting: None of the components are listed.
Louisiana Spill: None of the components are listed.
Massachusetts Spill: None of the components are listed.
Massachusetts Substances: The following components are listed: BUTYL BENZYL PHTHALATE; 2-BUTOXYETHANOL
Michigan Critical Material: None of the components are listed.
Minnesota Hazardous Substances: The following components are listed: 2-butoxyethanol
New Jersey Hazardous Substances: The following components are listed: BUTYL BENZYL PHTHALATE; 1,2-BENZENEDICARBOXYLIC ACID, BUTYL PHENYLMETHYL ESTER; 2-BUTOXY ETHANOL; BUTYL CELLOSOLVE
New Jersey Spill: None of the components are listed.
New Jersey Toxic Catastrophe Prevention Act: None of the components are listed.
New York Acutely Hazardous Substances: The following components are listed: Butyl benzyl phthalate
New York Toxic Chemical Release Reporting: None of the components are listed.
Pennsylvania RTK Hazardous Substances: The following components are listed: 1, 2-BENZENEDICARBOXYLIC ACID, BUTYL PHENYLMETHYL ESTER; ETHANOL, 2-BUTOXY-
Rhode Island Hazardous Substances: None of the components are listed.

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

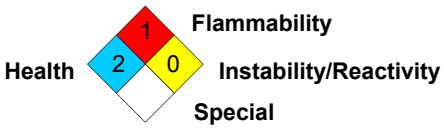
Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Butyl benzyl phthalate	No.	Yes.	No.	No.

United States inventory (TSCA 8b) : All components are listed or exempted.

Section 16. Other information

Label requirements : HARMFUL IF SWALLOWED. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. POSSIBLE BIRTH DEFECT HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE BIRTH DEFECTS, BASED ON ANIMAL DATA. POSSIBLE REPRODUCTIVE HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE ADVERSE REPRODUCTIVE EFFECTS IN MALES, BASED ON ANIMAL DATA.

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



Continued on next page

Date of printing	:	**7/1/2013.**
Date of issue	:	**7/1/2013.**
Date of previous issue	:	**No previous validation.**
Version	:	**3**
Code	:	030468WW52502

Notice to reader

The information contained in the Material Safety Data Sheet is based on our data available on the date of publication. The information is intended to aid the user in controlling the handling risks; it is not to be construed as a warranty or specification of the product quality. The information may not be or may not altogether be applicable to combinations of the product with other substances or to particular applications.
The user is responsible for ensuring that appropriate precautions are taken and for satisfying themselves that the data are suitable and sufficient for the product's intended purpose. In case of any unclarity we advise consulting the supplier or an expert.

Sources of key data	:	Literature data and/or investigation reports are available through the manufacturer.
Alterations compared to the previous version	:	Alterations compared to the previous version are marked with a little (blue) triangle.