

1 Identification

- **Product identifier**
- **Trade name:** RNApro™ Solution
- **Article number:** 6055050
- **Application of the substance / the mixture** *Research use only.*
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
MP Biomedicals, LLC
29525 Fountain Parkway
Solon, OH 44139
United States
www.mpbio.com
- **Information department:** *Product safety department*
- **Emergency telephone number:** *CHEMTREC: 1-800-424-9300 (1-703-527-3887)*

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS06 Skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.

Acute Tox. 3 H331 Toxic if inhaled.



GHS08 Health hazard

Muta. 2 H341 Suspected of causing genetic defects.

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.



GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Acute Tox. 4 H312 Harmful in contact with skin.

Flam. Liq. 4 H227 Combustible liquid.

- **Label elements**
- **GHS label elements** *The product is classified and labeled according to the Globally Harmonized System (GHS).*
- **Hazard pictograms**



GHS05



GHS06



GHS08

Safety Data Sheet

acc. to OSHA HCS

Printing date 02/03/2016

Reviewed on 02/01/2016

Trade name: RNapro™ Solution

(Contd. of page 1)

· **Signal word** *Danger*

· **Hazard-determining components of labeling:**

Phenol

Guanidine Thiocyanate

· **Hazard statements**

Combustible liquid.

Toxic if swallowed or if inhaled.

Harmful in contact with skin.

Causes severe skin burns and eye damage.

Suspected of causing genetic defects.

May cause damage to organs through prolonged or repeated exposure.

· **Precautionary statements**

Keep away from flames and hot surfaces. – No smoking.

Do not breathe dusts or mists.

Wear protective gloves / eye protection / face protection.

Wear protective gloves / protective clothing.

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Specific treatment (see on this label).

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER/doctor if you feel unwell.

Wash contaminated clothing before reuse.

IF exposed or concerned: Get medical advice/attention.

If swallowed: Rinse mouth. Do NOT induce vomiting.

Get medical advice/attention if you feel unwell.

In case of fire: Use for extinction: CO2, powder or water spray.

Take off contaminated clothing and wash it before reuse.

Store locked up.

Store in a well-ventilated place. Keep container tightly closed.

Store in a well-ventilated place. Keep cool.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 3

Fire = 2

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



*Health = *3*

Fire = 2

Reactivity = 0

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS

Printing date 02/03/2016

Reviewed on 02/01/2016

Trade name: RNapro™ Solution

(Contd. of page 2)

· **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:** Mixture of the substances listed below with nonhazardous additions.

- **Dangerous components:**

CAS: 108-95-2 EINECS: 203-632-7 RTECS: SJ3325000	Phenol	25-50%
	Guanidine Thiocyanate	10-<25%
CAS: 56-81-5 EINECS: 200-289-5 RTECS: MA8050000	Glycerol	0.1-1%

4 First-aid measures

- **Description of first aid measures**
- **General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
Remove breathing apparatus only after contaminated clothing have been completely removed.
In case of irregular breathing or respiratory arrest provide artificial respiration.
- **After inhalation:**
Supply fresh air or oxygen; call for doctor.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
Do not induce vomiting; immediately call for medical help.
Drink copious amounts of water and provide fresh air. Immediately call a doctor.
- **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture**
During heating or in case of fire poisonous gases are produced.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

US
(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 02/03/2016

Reviewed on 02/01/2016

Trade name: RNapro™ Solution

(Contd. of page 3)

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**

Mount respiratory protective device.

Wear protective equipment. Keep unprotected persons away.

- **Environmental precautions:**

Dilute with plenty of water.

Do not allow to enter sewers/ surface or ground water.

- **Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Use neutralizing agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

- **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

- **Handling:**

- **Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Prevent formation of aerosols.

- **Information about protection against explosions and fires:**

Keep ignition sources away - Do not smoke.

Keep respiratory protective device available.

- **Conditions for safe storage, including any incompatibilities**

· **Storage:** 15 - 30 °C

· **Requirements to be met by storerooms and receptacles:** No special requirements.

· **Information about storage in one common storage facility:** Not required.

· **Further information about storage conditions:** Keep receptacle tightly sealed.

· **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

- **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

108-95-2 Phenol

PEL Long-term value: 19 mg/m³, 5 ppm
Skin

REL Long-term value: 19 mg/m³, 5 ppm
Ceiling limit value: 60* mg/m³, 15.6* ppm
*15-min; Skin

TLV Long-term value: 19 mg/m³, 5 ppm
Skin; BEI

(Contd. on page 5)

Safety Data Sheet

acc. to OSHA HCS

Printing date 02/03/2016

Reviewed on 02/01/2016

Trade name: RNapro™ Solution

(Contd. of page 4)

56-81-5 Glycerol

PEL Long-term value: 15* 5** mg/m³
mist; *total dust **respirable fraction

TLV TLV withdrawn-insufficient data human occup. exp.

· **Ingredients with biological limit values:**

108-95-2 Phenol

BEI 250 mg/g creatinine
urine
end of shift
Phenol with hydrolysis (background, nonspecific)

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing.
- Wash hands before breaks and at the end of work.
- Store protective clothing separately.
- Avoid contact with the eyes.
- Avoid contact with the eyes and skin.

· **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

US

(Contd. on page 6)

Safety Data Sheet

acc. to OSHA HCS

Printing date 02/03/2016

Reviewed on 02/01/2016

Trade name: RN Apro™ Solution

(Contd. of page 5)

9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

Form:	Liquid
Color:	According to product specification
Odor:	Characteristic
Odor threshold:	Not determined.

- **pH-value:** Not determined.

- **Change in condition**

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.

- **Flash point:** 82 °C (180 °F)

- **Flammability (solid, gaseous):** Not applicable.

- **Ignition temperature:** 715 °C (1319 °F)

- **Decomposition temperature:** Not determined.

- **Auto igniting:** Product is not selfigniting.

- **Danger of explosion:** Not determined.

- **Explosion limits:**

Lower:	1.3 Vol %
Upper:	9.5 Vol %

- **Vapor pressure at 20 °C (68 °F):** 23 hPa (17 mm Hg)

- **Density:** Not determined.

- **Relative density** Not determined.

- **Vapor density** Not determined.

- **Evaporation rate** Not determined.

- **Solubility in / Miscibility with** -

- **Water:** Soluble.

- **Partition coefficient (n-octanol/water):** Not determined.

- **Viscosity:**

Dynamic:	Not determined.
Kinematic:	Not determined.

- **Solvent content:**

Organic solvents:	43.0 %
Water:	30.9 %
VOC content:	42.0 %
	420.0 g/l / 3.51 lb/gl

- **Other information** No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.

- **Chemical stability**

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

(Contd. on page 7)

Safety Data Sheet

acc. to OSHA HCS

Printing date 02/03/2016

Reviewed on 02/01/2016

Trade name: RNapro™ Solution

(Contd. of page 6)

- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

108-95-2 Phenol

Oral	LD50	317 mg/kg (rat)
Dermal	LD50	630 mg/kg (rabbit)

- **Primary irritant effect:**

· **on the skin:** Caustic effect on skin and mucous membranes.

· **on the eye:**

Strong caustic effect.

Strong irritant with the danger of severe eye injury.

· **Sensitization:** No sensitizing effects known.

- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Toxic

Harmful

Corrosive

Irritant

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

108-95-2	Phenol	3
----------	--------	---

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

12 Ecological information

- **Toxicity**

- **Aquatic toxicity:**

108-95-2 Phenol

Oral	LC50 / 96 h	36.1 - 68.8 mg/L (Carassius auratus)
------	-------------	--------------------------------------

· **Persistence and degradability** No further relevant information available.

· **Behavior in environmental systems:**

· **Bioaccumulative potential** No further relevant information available.

· **Mobility in soil** No further relevant information available.

· **Additional ecological information:**

· **General notes:**

Water hazard class 2 (Self-assessment): hazardous for water

(Contd. on page 8)

Safety Data Sheet

acc. to OSHA HCS

Printing date 02/03/2016

Reviewed on 02/01/2016

Trade name: RNapro™ Solution

(Contd. of page 7)

Do not allow product to reach ground water, water course or sewage system.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
Danger to drinking water if even small quantities leak into the ground.

· **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**

· **Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**

- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· **UN-Number**

· **DOT, ADR, IMDG, IATA** UN2922

· **UN proper shipping name**

· **DOT, IATA** Corrosive liquids, toxic, n.o.s. (Guanidine Thiocyanate, Molecular Biology Reagent, Phenol)

· **ADR** 2922 Corrosive liquids, toxic, n.o.s. (Guanidine Thiocyanate, Molecular Biology Reagent, Phenol)

· **IMDG** CORROSIVE LIQUID, TOXIC, N.O.S. (Guanidine Thiocyanate, Molecular Biology Reagent, PHENOL)

· **Transport hazard class(es)**

· **DOT**



· **Class** 8 Corrosive substances

· **Label** 8, 6.1

· **ADR**



· **Class** 8 Corrosive substances

· **Label** 8+6.1

(Contd. on page 9)

Safety Data Sheet

acc. to OSHA HCS

Printing date 02/03/2016

Reviewed on 02/01/2016

Trade name: RNapro™ Solution

(Contd. of page 8)

· **IMDG**

· **Class** 8 Corrosive substances
 · **Label** 8/6.1

· **IATA**

· **Class** 8 Corrosive substances
 · **Label** 8 (6.1)

· **Packing group**

· **DOT, ADR, IMDG, IATA** III

· **Environmental hazards:**

· **Marine pollutant:** No

· **Special precautions for user**

Warning: Corrosive substances

· **Danger code (Kemler):**

86

· **EMS Number:**

F-A,S-B

· **Stowage Category**

B

· **Stowage Code**

SW2 Clear of living quarters.

· **Transport in bulk according to Annex II of
 MARPOL73/78 and the IBC Code**

Not applicable.

· **Transport/Additional information:**· **DOT**· **Quantity limitations**

On passenger aircraft/rail: 5 L

On cargo aircraft only: 60 L

· **ADR**· **Excepted quantities (EQ)**

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

· **IMDG**· **Limited quantities (LQ)**

5L

· **Excepted quantities (EQ)**

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

· **UN "Model Regulation":**

UN 2922 CORROSIVE LIQUIDS, TOXIC, N.O.S. (GUANIDINE
 THIOCYANATE, MOLECULAR BIOLOGY REAGENT, PHENOL),
 8 (6.1), III

US

(Contd. on page 10)

Safety Data Sheet

acc. to OSHA HCS

Printing date 02/03/2016

Reviewed on 02/01/2016

Trade name: RNAPRO™ Solution

(Contd. of page 9)

15 Regulatory information

· Safety, health and environmental regulations/legislation specific for the substance or mixture

· Sara

· Section 355 (extremely hazardous substances):

108-95-2	Phenol
----------	--------

· Section 313 (Specific toxic chemical listings):

108-95-2	Phenol
----------	--------

· TSCA (Toxic Substances Control Act):

108-95-2	Phenol
----------	--------

	Guanidine Thiocyanate
--	-----------------------

77-86-1	TRIS
---------	------

56-81-5	Glycerol
---------	----------

127-09-3	Sodium Acetate, Anhydrous, USP
----------	--------------------------------

97-78-9	N-Lauroylsarcosine
---------	--------------------

7732-18-5	Water
-----------	-------

· Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

· Carcinogenic categories

· EPA (Environmental Protection Agency)

108-95-2	Phenol			
----------	--------	--	--	--

				D, I
--	--	--	--	------

· TLV (Threshold Limit Value established by ACGIH)

108-95-2	Phenol			
----------	--------	--	--	--

				A4
--	--	--	--	----

· NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

· GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).

· Hazard pictograms



GHS05

GHS06

GHS08

· Signal word Danger

· Hazard-determining components of labeling:

Phenol

Guanidine Thiocyanate

(Contd. on page 11)

Safety Data Sheet

acc. to OSHA HCS

Printing date 02/03/2016

Reviewed on 02/01/2016

Trade name: RNapro™ Solution

(Contd. of page 10)

· **Hazard statements**

- Combustible liquid.
- Toxic if swallowed or if inhaled.
- Harmful in contact with skin.
- Causes severe skin burns and eye damage.
- Suspected of causing genetic defects.
- May cause damage to organs through prolonged or repeated exposure.

· **Precautionary statements**

- Keep away from flames and hot surfaces. – No smoking.
 - Do not breathe dusts or mists.
 - Wear protective gloves / eye protection / face protection.
 - Wear protective gloves / protective clothing.
 - Wash thoroughly after handling.
 - Do not eat, drink or smoke when using this product.
 - Use only outdoors or in a well-ventilated area.
 - Obtain special instructions before use.
 - Do not handle until all safety precautions have been read and understood.
 - IF SWALLOWED:** Immediately call a POISON CENTER/ doctor.
 - If on skin (or hair):** Take off immediately all contaminated clothing. Rinse skin with water/shower.
 - If in eyes:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 - Specific treatment (see on this label).
 - IF INHALED:** Remove person to fresh air and keep comfortable for breathing.
 - Call a POISON CENTER/doctor if you feel unwell.
 - Wash contaminated clothing before reuse.
 - IF exposed or concerned:** Get medical advice/attention.
 - If swallowed:** Rinse mouth. Do NOT induce vomiting.
 - Get medical advice/attention if you feel unwell.
 - In case of fire:** Use for extinction: CO₂, powder or water spray.
 - Take off contaminated clothing and wash it before reuse.
 - Store locked up.
 - Store in a well-ventilated place. Keep container tightly closed.
 - Store in a well-ventilated place. Keep cool.
 - Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Product safety department

· **Date of preparation / last revision** 02/03/2016 / -

· **Abbreviations and acronyms:**

- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- DOT: US Department of Transportation
- IATA: International Air Transport Association
- ACGIH: American Conference of Governmental Industrial Hygienists
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- NFPA: National Fire Protection Association (USA)
- HMIS: Hazardous Materials Identification System (USA)
- VOC: Volatile Organic Compounds (USA, EU)
- LC50: Lethal concentration, 50 percent

(Contd. on page 12)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/03/2016

Reviewed on 02/01/2016

Trade name: RNapro™ Solution

(Contd. of page 11)

*LD50: Lethal dose, 50 percent**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**NIOSH: National Institute for Occupational Safety**OSHA: Occupational Safety & Health**TLV: Threshold Limit Value**PEL: Permissible Exposure Limit**REL: Recommended Exposure Limit**BEI: Biological Exposure Limit**Flam. Liq. 4: Flammable liquids, Hazard Category 4**Acute Tox. 3: Acute toxicity, Hazard Category 3**Acute Tox. 4: Acute toxicity, Hazard Category 4**Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B**Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1**Muta. 2: Germ cell mutagenicity, Hazard Category 2**STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2*

US