

Safety Data Sheet
according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and
GHS

1 Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier**
- **Trade name:** PNA Probe + Hybridization Buffer
- **Article number:** CP0001-CP0011, and CP0050-CP0055
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **1.3 Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**
OpGen, Inc.
708 Quince Orchard Rd
Gaithersburg, MD 20878
Phone: (301) 869-9683
- **1.4 Emergency telephone number:**
ChemTel Inc.
(800)255-3924, +1 (813)248-0585

2 Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
The following Hazard Statements are applicable only to the EU regulations and not the US GHS regulation: H360D, H412.
The following Hazard Statements are applicable only according to OSHA regulations within the United States. These Statements are not applicable for the CLP regulation (1272/2008/EC) in the EU. H360.



H360: May damage fertility or the unborn child



health hazard

Repr. 1B H360D May damage the unborn child.



Eye Irrit. 2 H319 Causes serious eye irritation.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



T; Toxic

R60-61: May impair fertility. May cause harm to the unborn child.



Xi; Irritant

Safety Data Sheet
according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and
GHS

Trade name: PNA Probe + Hybridization Buffer

R36: Irritating to eyes.

R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

• **Information concerning particular hazards for human and environment:**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

• **Classification system:**

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

The classification is in accordance with the latest editions of international substances lists, and is supplemented by information from technical literature and by information provided by the company.

• **2.2 Label elements**

• **Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the CLP regulation.

• **Hazard pictograms**



GHS07 GHS08

• **Signal word** Danger

• **Hazard-determining components of labelling:**

formamide

• **Hazard statements**

The following Hazard Statements are applicable only to the EU regulations and not the US GHS regulation: H360D, H412.

The following Hazard Statements are applicable only according to OSHA regulations within the United States. These Statements are not applicable for the CLP regulation (1272/2008/EC) in the EU. H360.

H360 May damage fertility or the unborn child.

H319 Causes serious eye irritation.

H360D May damage the unborn child.

H412 Harmful to aquatic life with long lasting effects.

• **Precautionary statements**

P281 Use personal protective equipment as required.

P264 Wash thoroughly after handling.

P202 Do not handle until all safety precautions have been read and understood.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308+P313 IF exposed or concerned: Get medical advice/attention.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

• **Additional information:**

Restricted to professional users.

Keep out of the reach of children

Safety Data Sheet

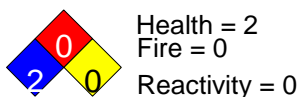
according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and
GHS

Trade name: PNA Probe + Hybridization Buffer

- **Hazard description:**
- **WHMIS-symbols:**
D2A - Very toxic material causing other toxic effects



- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**



* - Indicates a long term health hazard from repeated or prolonged exposures.

- **HMIS Long Term Health Hazard Substances**

None of the ingredients is listed.

- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **3.2 Mixtures**
- **Description:** Mixture of substances listed below with nonhazardous additions.

- **Dangerous components:**

CAS: 75-12-7 EINECS: 200-842-0 Index number: 616-052-00-8	formamide T Repr. Cat. 2 R61 Repr. 1B, H360D	25-50%
CAS: 9002-93-1	Polyethylene glycol octylphenol ether Xi R36/38; N R50/53 Eye Dam. 1, H318 Aquatic Acute 1, H400; Aquatic Chronic 1, H410 Skin Irrit. 2, H315	≤ 2,5%
· SVHC		
75-12-7	formamide	
9002-93-1	Polyethylene glycol octylphenol ether	

Safety Data Sheet
according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and
GHS

Trade name: PNA Probe + Hybridization Buffer

- **Additional information:** For the wording of the listed risk phrases refer to section 16.

4 First aid measures

- **4.1 Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**
Immediately rinse with water.
If skin irritation continues, consult a doctor.
- **After eye contact:**
Remove contact lenses if worn.
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; call for medical help immediately.
- **4.2 Most important symptoms and effects, both acute and delayed**
Headache
Slight irritant effect on skin and mucous membranes.
Irritant to eyes.
Nausea in case of ingestion.
Gastric or intestinal disorders when ingested.
Dizziness
- **Hazards**
Danger of disturbed cardiac rhythm.
Danger of convulsion.
Condition may deteriorate with alcohol consumption.
May damage fertility or the unborn child.
- **4.3 Indication of any immediate medical attention and special treatment needed**
May produce a teratogenic effect.
Treat skin and mucous membrane with antihistamine and corticoid preparations.
Monitor circulation.

5 Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** None.
- **5.2 Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
- **5.3 Advice for firefighters**
- **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.

Safety Data Sheet
according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and
GHS

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· **Additional information** No further relevant information available.

6 Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Use respiratory protective device against the effects of fumes/dust/aerosol.
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
- **6.2 Environmental precautions:**
Do not allow to enter sewers/ surface or ground water.
Inform respective authorities in case of seepage into water course or sewage system.
- **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Pick up mechanically.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
Clean the affected area carefully; suitable cleaners are:
Warm water
- **6.4 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

- **7.1 Precautions for safe handling**
Prevent formation of aerosols.
Avoid splashes or spray in enclosed areas.
Use only in well ventilated areas.
- **Information about fire - and explosion protection:** Keep respiratory protective device available.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Store at 35,6 - 46,4 °F / 2 - 8 °C .
Avoid storage near extreme heat, ignition sources or open flame.
- **Information about storage in one common storage facility:**
Store away from foodstuffs.
Do not store together with oxidizing and acidic materials.
- **Further information about storage conditions:**
Store in cool, dry conditions in well sealed receptacles.
Protect from heat and direct sunlight.
Protect from exposure to the light.
- **7.3 Specific end use(s)** No further relevant information available.

Safety Data Sheet
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8 Exposure controls/personal protection

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

· **8.1 Control parameters**

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

75-12-7 formamide

REL (USA) Long-term value: 15 mg/m³, 10 ppm
Skin

TLV (USA) Long-term value: 18 mg/m³, 10 ppm
Skin

EL (Canada) Long-term value: 10 ppm
Skin

EV (Canada) Long-term value: 15 mg/m³, 10 ppm
Skin

· **DNELs** No further relevant information available.

· **PNECs** No further relevant information available.

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

· **8.2 Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

The usual precautionary measures are to be adhered to when handling chemicals.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Pregnant women should strictly avoid inhalation or skin contact.

Do not inhale gases / fumes / aerosols.

· **Respiratory protection:**

Not required under normal conditions of use.

For spills, respiratory protection may be advisable.

Use suitable respiratory protective device when aerosol or mist is formed.

Use suitable respiratory protective device when high concentrations are present.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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 cannot be calculated in advance and has therefore to be checked prior to the application.

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and
GHS

Trade name: PNA Probe + Hybridization Buffer

- **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:**



Safety glasses

- **Body protection:** Protective work clothing

- **Limitation and supervision of exposure into the environment**

No further relevant information available.

- **Risk management measures**

See Section 7 for additional information.

No further relevant information available.

9 Physical and chemical properties

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

- **General Information**

- **Appearance:**

Form:

Liquid

Colour:

Clear to straw color.

- **Odour:**

Amine-like

- **Odour threshold:**

Not determined.

- **pH-value:**

Not determined.

- **Change in condition**

Melting point/Melting range:

Not Determined.

Boiling point/Boiling range:

Undetermined.

- **Flash point:**

Not applicable.

- **Flammability (solid, gaseous):**

Not applicable.

- **Auto/Self-ignition temperature:**

Not determined.

- **Decomposition temperature:**

Not determined.

- **Self-igniting:**

Product is not self-igniting.

- **Danger of explosion:**

Product does not present an explosion hazard.

- **Explosion limits:**

Lower:

Not determined.

Upper:

Not determined.

- **Vapour pressure:**

Not determined.

- **Density:**

Not determined.

- **Relative density**

Not determined.

- **Vapour density**

Not determined.

Safety Data Sheet
according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and
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Trade name: PNA Probe + Hybridization Buffer

- **Evaporation rate** Not determined.
- **Solubility in / Miscibility with water:** Fully miscible.
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
 - Dynamic:** Not determined.
 - Kinematic:** Not determined.
- **9.2 Other information** No further relevant information available.

10 Stability and reactivity

- **10.1 Reactivity**
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
- **10.3 Possibility of hazardous reactions**
Toxic fumes may be released if heated above the decomposition point.
Reacts with strong alkali.
Reacts with acids.
Reacts with strong oxidizing agents.
- **10.4 Conditions to avoid** Keep away from heat and direct sunlight.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:**
Carbon monoxide and carbon dioxide
Chlorine
Nitrogen oxides (NO_x)
Sulphur oxides (SO_x)

11 Toxicological information

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

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

75-12-7 formamide

Oral	LD50	5570 mg/kg (rat)
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- **Primary irritant effect:**
 - **on the skin:** Irritant to skin and mucous membranes.
 - **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Irritant

Safety Data Sheet
according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and
GHS

Trade name: PNA Probe + Hybridization Buffer

May damage fertility or the unborn child.

- **Repeated dose toxicity:** May cause damage to organs through prolonged or repeated exposure.
- **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction):**
Repr. 1B

12 Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** The product contains materials that are harmful to the environment.
- **12.2 Persistence and degradability** The product is partially biodegradable. Significant residuals remain.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Harmful to fish
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Due to available data on eliminability/decomposition and bioaccumulation potential prolonged term damage of the environment cannot be excluded.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

13 Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
On the basis of the necessary technical regulations and after consultation with the disposal agent and the relevant authorities, can be disposed of with domestic waste or incinerated with domestic waste.
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. Residual materials should be treated as hazardous.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

14 Transport information

- **14.1 UN-Number**
- **DOT, ADR, ADN, IMDG, IATA** Not Regulated

Safety Data Sheet
 according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and
 GHS

Trade name: PNA Probe + Hybridization Buffer

- 14.2 UN proper shipping name
 - DOT, ADR, ADN, IMDG, IATA
 - 14.3 Transport hazard class(es)
 - DOT, ADR, ADN, IMDG, IATA
 - Class
 - 14.4 Packing group
 - DOT, ADR, IMDG, IATA
 - 14.5 Environmental hazards:
 - Marine pollutant:
 - 14.6 Special precautions for user
 - 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
 - UN "Model Regulation":
- Not Regulated
- Not Regulated
- Not Regulated
- No
- Not applicable.
- Not applicable.
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15 Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- United States (USA)
- SARA

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

· **Proposition 65 (California):**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are 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)**

None of the ingredients is listed.

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

None of the ingredients is listed.

Safety Data Sheet
 according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and
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· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

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

None of the ingredients is listed.

· **Canada**

· **Canadian Domestic Substances List (DSL)**

All ingredients are listed.

· **Canadian Ingredient Disclosure list (limit 0.1%)**

75-12-7	formamide
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· **Canadian Ingredient Disclosure list (limit 1%)**

9002-93-1	Polyethylene glycol octylphenol ether
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· **Other regulations, limitations and prohibitive regulations**

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

· **Substances of very high concern (SVHC) according to REACH, Article 57**

75-12-7	formamide
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9002-93-1	Polyethylene glycol octylphenol ether
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· **15.2 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.

· **Relevant phrases**

- H315 Causes skin irritation.
- H318 Causes serious eye damage.
- H360D May damage the unborn child.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.

R36/38 Irritating to eyes and skin.

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R61 May cause harm to the unborn child.

· **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

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

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)

Safety Data Sheet
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GHS

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HMIS: Hazardous Materials Identification System (USA)
WHMIS: Workplace Hazardous Materials Information System (Canada)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
Repr. 1B: Reproductive toxicity, Hazard Category 1B
Aquatic Acute 1: Hazardous to the aquatic environment - AcuteHazard, Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - Chronic Hazard, Category 1
Aquatic Chronic 3: Hazardous to the aquatic environment - Chronic Hazard, Category 3

• **Sources**

SDS Prepared by:

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