



PO Box 329 • 802 Washington Avenue • Chestertown, MD 21620 • USA

Telephone Number For Information 410-778-3100

24 Hour Emergency Number (CHEM-TEL) : USA, Canada, Puerto Rico 800-255-3924;

Outside North American continent: 813-248-0585 (call collect)

# MSDS

## Material Safety Data Sheet

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### 1. Product Identification

**Product Code:**

**4255**

**Product Description:**

Hardness Buffer Reagent

**Manufactured By:**

LaMotte Company

802 Washington Avenue

Chestertown, MD 21620

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### 2. Composition/Information on Ingredients

Hazardous	Name	CAS #	%	OSHA PEL	ACGIH TLV
Yes	Ammonium Hydroxide (16% w/w aqueous ammonia)	1336-21-6	57	35 mg/cubic m as NH3	25 mg/cubic m as NH3
Yes	Ammonium Chloride	12125-02-9	7	10 mg/cubic m (fume)	10 mg/cubic m (fume)
	Water to 100%				

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### 3. Hazards Overview

**Primary Route of Entry:** Ingestion Inhalation Skin

**Warning! Corrosive. Vapors harmful to mucous membranes.** Irritating to respiratory system, eyes, and skin. Can cause burns on contact and may be fatal if swallowed.

**HMIS Hazard:** (Scale: 4 = Extreme, 3 = High, 2 = Moderate, 1 = Slight, 0 = Least)

Health: 2      Flammability: 1      Reactivity: 1

**Carcinogenicity:** None

**Other Health Related Comments:**

Persons with pre-existing respiratory conditions may be more susceptible to effects of this product.

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### 4. First Aid Measures

**Eye Contact:** Immediately flush with water for 15 minutes. Consult a physician.

**Skin Contact:** Immediately flush with water for 15 minutes while removing affected clothing. Rinse skin thoroughly.

**Ingestion:** Do not induce vomiting. Rinse mouth. Drink plenty of water. Call a physician immediately.

**Inhalation:** Remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

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**Product Code:** 4255

**Product Description:** Hardness Buffer Reagent

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### **5. Fire Fighting Measures**

**Flash Point:** N/A    **LEL:** 15% (NH<sub>3</sub>)    **UEL:** 28% (NH<sub>3</sub>)

#### **Fire Rating**

**Extinguishing Media:** Water spray

**Special Fire Fighting Procedures:** Firefighters wear SCBA.

**Hazardous Combustion and/or Decomposition Products:** Ammonia, NO<sub>x</sub>

**Unusual Fire & Explosion Hazard:** Gives off flammable vapors. Closed containers exposed to heat may explode.

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### **6. Accidental Release Measures**

Ventilate area of spill. Do not breathe vapor. Wearing gloves and eye protection, neutralize spill with dilute hydrochloric acid. Dilute with water and mop up for disposal to drain. (Wear NIOSH approved respirator with ammonia vapor cartridge if airborne concentration exceeds TLV during clean up of large spills.)

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### **7. Handling & Storage**

Store tightly closed, in ventilated area, away from heat, light, and acids.

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### **8. Exposure Controls/Personal Protection**

#### **Ventilation**

A system of local and/or general exhaust is recommended.

#### **Protection When Handling**

Gloves   Eye Protection   Lab Coat

**Work/Hygienic Practices:** Use only with adequate ventilation and avoid contact with skin or clothing.

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### **9. Physical & Chemical Properties**

<b>Appearance:</b>	Colorless Clear Liquid	<b>Boiling Point:</b>	Unknown
		<b>Melting Point:</b>	N/A
		<b>pH:</b>	11
<b>Odor:</b>	Pungent, ammonia	<b>Vapor Density:</b>	Unknown
<b>Solubility in Water:</b>	Soluble	<b>Vapor Pressure:</b>	ammonia: 8.5atm

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**Product Code: 4255**

**Product Description: Hardness Buffer Reagent**

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**10. Stability & Reactivity**

**Stable:** Yes  
**Conditions to Avoid:** Heat, light  
**Materials to Avoid:** Chlorine, bleaches, acids, metals, silver nitrate

**Hazardous Decomposition Products:** Ammonia, NOx

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**11. Toxicological Information**

**Oral rat LD50:** 350 mg/kg for ammonium hydroxide. Toxic if swallowed. Investigated as a mutagen.

**Target Organs:** Lungs Skin Eyes

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**12. Ecological Information**

Information not Available

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**13. Disposal Considerations**

Carefully neutralize with dilute hydrochloric acid. Flush down drain with excess water. Dispose according to federal, state and local regulations.

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**14. Transport Information**

**Proper Shipping Name:** AMMONIA SOLUTIONS, >10%, <35% ammonia

**Hazard Class/Div:** 8

**UN 2672**

**UN Packing Group:** II

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**15. Regulatory Information**

**Chemical Inventory Status**

<b>Ingredient</b>	<b>USA TSCA</b>	<b>Europe EC</b>	<b>---Canada---</b>		<b>Australia</b>	<b>Japan</b>
			<b>DSL</b>	<b>NDSL</b>		
Ammonium Hydroxide (16% w/w aqueous ammonia)	Yes	Yes	Yes	No	Yes	Yes
Ammonium Chloride	Yes	Yes	Yes	No	Yes	Yes
Water to 100%						

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**Product Code: 4255**

**Product Description: Hardness Buffer Reagent**

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**Federal, State, & International Regulations**

<b>Ingredient</b>	---SARA 302---		----- SARA 313 -----			<b>RCRA 261.33</b>	<b>TSCA 8(D)</b>
	<b>RQ</b>	<b>TPQ</b>	<b>Listed</b>	<b>Chemical Category</b>	<b>CERCLA</b>		
Ammonium Hydroxide (16% w/w aqueous ammonia)	No	No	No	No	1000	No	No
Ammonium Chloride	No	No	No	No	5000	No	No
Water to 100%							

<b>Ingredient</b>	----- SARA 311/312 -----	----- Australia -----		<b>This MSDS is WHMIS Compliant</b>
	<b>Hazard Categories</b>	<b>Hazchem Code</b>	<b>Poison Schedule</b>	
Ammonium Hydroxide (16% w/w aqueous ammonia)	Acute: Yes Chronic: Yes Fire: No Pressure: No Reactivity: No (Liquid/mixture)	2P	S6	
Ammonium Chloride	Acute: Yes Chronic: No Fire: No Pressure: No Reactivity: No (Pure/solid)	None Allocated	None Allocated	
Water to 100%				
<b>For product #4255 liquid mixture as a whole</b>	Acute: Yes Chronic: Yes Fire: No Pressure: No Reactivity: No (Liquid/mixture)	2P	S6	Yes

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**16. Other Information**

**Prepared By: IP**

**Revised: 5/20/2005**



# MSDS

P.O. Box 329 - 802 Washington Avenue Chestertown, MD 21620 - USA

## MATERIAL SAFETY DATA SHEET

TELEPHONE # FOR INFORMATION 410 778-3100

24 HOUR EMERGENCY NUMBER (CHEM-TEL): USA, Canada, Puerto Rico 800-255-3924;

Outside North American Continent 813-248-0585 (call Collect)

### 1. Product Identification

**Product Code:** 3956

**Product Description:** Manganese Indicator Reagent

**Manufactured By:** LaMotte Company

802 Washington Avenue

Chestertown, MD 21620

### 2. Composition/Information On Ingredients

Hazard	CAS#/Name	%	PEL	TLV
Yes	67-56-1 Methanol	>99%	260 mg/cubic m	200 ppm
Yes	85-85-8 1-(2-pyridylazo)-2-naphthol	0.1	N/E	N/E

### 3. Hazards Overview

**Primary Route Of Entry:** Eye Skin Ingestion Inhalation

Poison! Danger! Flammable liquid & vapor! Harmful if swallowed, inhaled, or absorbed through skin. Ingestion may be fatal or cause blindness. Inhalation can cause headache, nausea. Affects central nervous system. May cause irritation to eyes and skin.

#### HMIS Hazard

Scale: 4 = Extreme, 3 = High, 2 = Moderate, 1 = Slight, 0 = Least

Health: 3      Flammability: 3      Reactivity: 1

**Carcinogenicity:** None:

**Other Health Related Comments:**

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**Product Code:** 3956

**Product Description:** Manganese Indicator Reagent

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#### **4. First Aid Measures**

**Eye Contact:** Immediately flush with water for 15 minutes. Consult physician.

**Skin Contact:** Flush with water. Wash with soap and water.

**Ingestion:** Call a physician immediately.

**Inhalation:** Remove to fresh air. Give artificial respiration if breathing has stopped. If breathing is difficult, give oxygen.

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#### **5. Fire Fighting Measures**

**Flash Point (Method Used):** 52 deg F-closed cup      **LEL:** 6.7%      **UEL:** 36.5%

**Extinguishing Media:** Dry chemical, CO<sub>2</sub>, or water spray

**Special Fire Fighting Procedures:** Firefighters wear self-contained breathing apparatus

**Unusual Fire & Explosion Hazard:** Vapors may travel to ignition source and flash back.

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#### **6. Accidental Release Measures**

Eliminate all sources of ignition. Use non-sparking tools for clean up. Absorb on paper or spill pads. Evaporate on iron pan in fume hood.

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#### **7. Handling & Storage**

Store in cool, dry, storage area away from incompatible materials. Do not use near heat or flame.

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## **8. Exposure Controls/Personal Protection**

### **Ventilation**

Mechanical

### **Protection When Handling**

Eye Protection Gloves Lab Coat

**Work/Hygenic Practices:** Use with adequate ventilation and avoid contact with skin. Wash after handling.

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## **9. Physical & Chemical Properties**

**Appearance:** Clear Amber Liquid

**Solubility In Water:** Soluble

**Odor:** Alcohol

**pH:** N/A

**Vapor Density:** 1.1(Air=1)

**Vapor Pressure:** 98 mm Hg @ 68 deg F

**Boiling Point:** 150 deg F

**Melting Point:** N/A

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## **10. Stability & Reactivity**

**Stable:** Yes

**Conditions To Avoid:** Heat, sources of ignition

**Incompatibility (Materials To Avoid):** Strong acids, strong oxidizers

**Hazardous Decomposition Products:** CO<sub>x</sub> and formaldehyde.

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## **11. Toxicological Information**

Oral human LDLo:143mg/kg for methanol. TOXIC! Affects Central Nervous System (particularly the optic nerve) and the liver. Investigated as a mutagen, reproductive effector.

**Target Organs:** Central Nervous System Eyes Kidney Liver Skin

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**Product Code:** 3956

**Product Description:** Manganese Indicator Reagent

## 12. Ecological Information

Information Not Yet Available

## 13. Disposal Considerations

Small quantity: Flush down drain with excess water. Large quantity: Atomize into an incinerator. Dispose according to federal, state and local regulations.

## 14. Transportation Information

**Proper Shipping Name:**

**DOT:** METHANOL

**IATA:** METHANOL

**Hazard Class/Div:**

**DOT:** 3

**IATA:** 3/6.1

**UN:** 1230

**Packing Group:** II

## 15. Regulatory Information

### Chemical Inventory Status

Hazard	Ingredient	USA	Europe	--- Canada ---		Australia	Japan
		TSCA	EC	DSL	NDSL		
Yes	67-56-1 Methyl Alcohol	Yes	Yes	Yes	No	Yes	Yes
Yes	85-85-8 1-(2-pyridylazo)-2-naphthol	Yes	Yes	Yes	No	Yes	No

### Federal, State, & International Regulations

Ingredient	--- SARA 302 ---		----- SARA 313 -----		CERCLA	RCRA 261.33	TSCA 8(D)
	RQ	TPQ	Listed	Chemical Category			
67-56-1 Methyl Alcohol	No	No	Yes	No	5000	U154	No
85-85-8 1-(2-pyridylazo)-2-naphthol	No	No	No	No	No	No	No



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**Product Code:** 3956

**Product Description:** Manganese Indicator Reagent

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--- SARA 311/312 ---

**Hazard Categories**

----- Australia -----

**Hazchem  
Code**

**Poison  
Schedule**

**This MSDS Is  
WHMIS Compliant**

**Ingredient**    **Acute**    **Chronic**    **Fire**    **Pressure**    **Reactivity**

67-56-1        Yes        Yes        Yes    No        No  
Methyl Alcohol

85-85-8        Yes        No        No    No        No  
1-(2-pyridylazo)-2-naphthol

2PE

S6

None Allocated

None Allocated

**product 3956  
as a whole**

Yes    Yes    Yes    No    No

2PE

S6

Yes

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**16. Other Information**

**Prepared By:** IP, Regulatory Affairs Department

**Revised:** 3/13/2006

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# MSDS

P.O. Box 329 - 802 Washington Avenue Chestertown, MD 21620 - USA

## MATERIAL SAFETY DATA SHEET

TELEPHONE # FOR INFORMATION 410 778-3100

24 HOUR EMERGENCY NUMBER (CHEM-TEL): USA, Canada, Puerto Rico 800-255-3924;

Outside North American Continent 813-248-0585 (call Collect)

### 1. Product Identification

**Product Code:** 6565

**Product Description:** Sodium Cyanide, 10%

**Manufactured By:** LaMotte Company

802 Washington Avenue

Chestertown, MD 21620

### 2. Composition/Information On Ingredients

Hazard	CAS#/Name	%	PEL	TLV
Yes	143-33-9 Sodium Cyanide	10	5 mg/cubic m, skin as CN	5 mg/cubic m, skin as CN
Yes	1310-73-2 Sodium Hydroxide	0.2	C 2 mg/cubic m	C 2 mg/cubic m
No	7732-18-5 Water	to 100%		

### 3. Hazards Overview

**Primary Route Of Entry:** Ingestion Inhalation

Poison! Danger! Can cause severe irritation to eyes, skin, lungs. Harmful or fatal if swallowed. Poisoning can also occur by absorption through the skin.

#### HMIS Hazard

Scale: 4 = Extreme, 3 = High, 2 = Moderate, 1 = Slight, 0 = Least

Health: 3      Flammability: 0      Reactivity: 1

**Carcinogenicity:** None:

#### **Other Health Related Comments:**

Danger! May be rapidly fatal if swallowed. See Section 11.

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**Product Code:** 6565

**Product Description:** Sodium Cyanide, 10%

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#### **4. First Aid Measures**

**Eye Contact:** IMMEDIATELY flush with water for 15 minutes. Consult a physician.

**Skin Contact:** IMMEDIATELY flush with water for 15 minutes. Remove affected clothing and wash skin with soap and water.. Consult physician.

**Ingestion:** IMMEDIATELY induce vomiting and call a doctor. Prompt treatment is essential.

**Inhalation:** Remove to fresh air. If breathing is difficult give oxygen. Seek prompt medical attention.

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#### **5. Fire Fighting Measures**

**Flash Point (Method Used):** N/A

**LEL:** N/A

**UEL:** N/A

**Extinguishing Media:** Not a fire hazard

**Special Fire Fighting Procedures:** Firefighters wear SCBA.

**Unusual Fire & Explosion Hazard:** Contact with acid liberates poisonous hydrogen cyanide gas

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#### **6. Accidental Release Measures**

Absorb on inert material (vermiculite) or spill pads. Place in clean, dry plastic pail with lid and dispose of as hazardous waste. Do not flush to sewer. OR: Scoop up into beaker. Follow procedure in Section 13 for decomposing the cyanide.

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#### **7. Handling & Storage**

Store tightly closed in cool, dry ventilated "poison" area--away from incompatible materials like strong acids or oxidizers. Water or weak alkaline solutions (pH<10) of cyanides can evolve dangerous amounts of hydrogen cyanide in confined areas.

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## **8. Exposure Controls/Personal Protection**

### **Ventilation**

Mechanical

A system of local and/or general exhaust is recommended.

### **Protection When Handling**

Eye Protection Gloves Lab Coat

**Work/Hygenic Practices:** Keep #6565 from skin & clothing. Do not eat or smoke when using. Wash thoroughly after handling.

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## **9. Physical & Chemical Properties**

**Appearance:** Clear Colorless Liquid

**Solubility In Water:** Soluble

**Odor:** slight (almond) odor

**pH:** 12

**Vapor Density:** Unknown

**Vapor Pressure:** Unknown

**Boiling Point:** >100 deg C

**Melting Point:** N/A

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## **10. Stability & Reactivity**

**Stable:** Yes

**Conditions To Avoid:** Heat

**Incompatibility (Materials To Avoid):** Strong acids, strong oxidizers

**Hazardous Decomposition Products:** Hydrogen Cyanide Gas (highly toxic!)

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## **11. Toxicological Information**

Oral human LDLo: 2.9 mg/kg for solid sodium cyanide (highly toxic). Sodium cyanide investigated as a tumorigen.

**Target Organs:** Blood Lung Respiratory System

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**Product Code:** 6565

**Product Description:** Sodium Cyanide, 10%

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## **12. Ecological Information**

This material is expected to be very toxic to aquatic life and very toxic to terrestrial life, as well.

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## **13. Disposal Considerations**

In fume hood, cool beaker of waste cyanide in ice water. Decompose by adding a strong alkaline soln. of calcium hypochlorite (or commercial bleach) 'til bubbling ceases & there is a detectable excess of chlorine. Let stand for 24 hours. Flush to drain.

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## **14. Transportation Information**

### **Proper Shipping Name:**

**DOT:** CYANIDE SOLUTIONS, N.O.S. (10% SODIUM CYANIDE)

**IATA:** CYANIDE SOLUTION, N.O.S.  
(10% SODIUM CYANIDE)

### **Hazard Class/Div:**

**DOT:** 6.1

**IATA:** 6.1

**UN:** 1935

**Packing Group:** I

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## **15. Regulatory Information**

### **Chemical Inventory Status**

Hazard	Ingredient	USA	Europe	--- Canada ---		Australia	Japan
		TSCA	EC	DSL	NDSL		
Yes	143-33-9 Sodium Cyanide	Yes	Yes	Yes	No	Yes	Yes
Yes	1310-73-2 Sodium Hydroxide	Yes	Yes	Yes	No	Yes	Yes
No	7732-18-5 Distilled Water	Yes	Yes	Yes	No	Yes	Yes

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**Product Code:** 6565

**Product Description:** Sodium Cyanide, 10%

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**Federal, State, & International Regulations**

<b>Ingredient</b>	<b>--- SARA 302 ---</b>		<b>----- SARA 313 -----</b>		<b>CERCLA</b>	<b>RCRA 261.33</b>	<b>TSCA 8(D)</b>
	<b>RQ</b>	<b>TPQ</b>	<b>Listed</b>	<b>Chemical Category</b>			
143-33-9 Sodium Cyanide	10	100	No	Cyanide comp.	10	P106	No
1310-73-2 Sodium Hydroxide	No	No	No	No	1000	No	No
7732-18-5 Distilled Water	No	No	No	No	No	No	No

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**Product Code:** 6565

**Product Description:** Sodium Cyanide, 10%

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--- SARA 311/312 ---

----- Australia -----

**Hazard Categories**

<b>Ingredient</b>	<b>Acute</b>	<b>Chronic</b>	<b>Fire</b>	<b>Pressure</b>	<b>Reactivity</b>	<b>Hazchem Code</b>	<b>Poison Schedule</b>	<b>This MSDS Is WHMIS Compliant</b>
143-33-9 Sodium Cyanide	Yes	Yes	No	No	No	4X	S7	
1310-73-2 Sodium Hydroxide	Yes	No	No	No	Yes	2R	S6	
7732-18-5 Distilled Water	No	No	No	No	No	None Allocated	None Allocated	
<b>product 6565 as a whole</b>	Yes	Yes	No	No	No	4X	S7	Yes

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**16. Other Information**

Keep cyanide solution out of reach of children.

**Prepared By:** IP, Regulatory Affairs Department

**Revised:** 6/1/2006

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