

03



Environmental Protection & Compliance Division
Los Alamos National Laboratory
PO Box 1663, K499
Los Alamos, New Mexico 87545
(505) 667-2211

Environmental Management
Los Alamos Field Office
3747 West Jemez Road, A316
Los Alamos, New Mexico, 87544
(505) 665-5820/Fax (505) 665-5903

Date: **MAR 15 2017**
Symbol: EPC-DO: 17-128
LA-UR: 17-21948
Locates Action No.: N/A

Ms. Michelle Hunter, Chief
Ground Water Quality Bureau
New Mexico Environment Department
Harold Runnels Building, Room N2261
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, NM 87502

Subject: Notice of Intent to Conduct a Tracer Study at Los Alamos National Laboratory

Dear Ms. Hunter:

In accordance with Subsection A of 20.6.2.1201 New Mexico Administrative Code (NMAC), the U.S. Department of Energy and Los Alamos National Security, LLC (DOE/LANS) are filing this notice of intent (NOI) to conduct a tracer study at Los Alamos National Laboratory. Tracer deployment will occur at piezometer CrPZ-1. The tracer study will be conducted to evaluate groundwater flow velocities in the immediate vicinity of piezometer CrPZ-1 (near the periphery of the Cr (VI) plume beneath Mortandad Canyon) both with and without CrEX-2 pumping. This information will support the assessment of potential remedial alternatives for the Cr (VI)-contaminated groundwater. Enclosure 1 contains a completed NMED Ground Water Quality Bureau NOI form. Enclosures 2 and 3 provide information to support this notice.

Please contact Robert S. Beers by telephone at (505) 667-7969 or by email at bbeers@lanl.gov if you have questions regarding this NOI.

Sincerely,

John C. Bretzke
Division Leader

Sincerely,

Cheryl L. Rodriguez
Program Manager, FPD-II



Ms. Michelle Hunter
EPC-DO: 17-128

- 2 -

JCB/CLR/MTS/RSB: am

Enclosures: (1) Completed NMED GWQB Notice of Intent (NOI) to Discharge Form
(2) Map of the project site
(3) Safety Data Sheets (SDSs) for tracers

Copy: Shelly Lemon, NMED/SWQB, Santa Fe, NM, (E-File)
John E. Kieling, NMED/HWB, Santa Fe, NM, (E-File)
Stephen M. Yanicak, NMED/DOE/OB, (E-File)
Douglas E. Hintze, EM-LA, (E-File)
David S. Rhodes, EM-LA, (E-File)
Cheryl L. Rodriguez, EM-LA, (E-File)
Paul B. Underwood, EM-LA, (E-File)
Annette E. Russell, EM-LA, (E-File)
Craig S. Leasure, PADOPS, (E-File)
William R. Mairson, PADOPS, (E-File)
Michael T. Brandt, ADESH, (E-File)
Randall Mark Erickson, ADEM, (E-File)
Enrique Torres, ADEM, (E-File)
Bruce Robinson, ADEM-PO, (E-File)
Stephani F. Swickley, ADEM-PO, (E-File)
Danny Katzman, ADEM-PO, (E-File)
Paul W. Reimus, EES-14, (E-File)
Michael T. Saladen, EPC-CP, (E-File)
Robert S. Beers, EPC-CP, (E-File)
William J. Foley, EPC-CP, (E-File)
Ellena I. Martinez, EPC-CP, (E-File)
lasomailbox@nnsa.doe.gov, (E-File)
emla.docs@em.doe.gov, (E-File)
locatesteam@lanl.gov, (E-File)
cpc-correspondence@lanl.gov, (E-File)
adesh-records@lanl.gov, (E-File)



COPY

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MAR 15 2017

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GROUND WATER
MAR 16 2017
BUREAU

Ms. Michelle Hunter, Chief
Ground Water Quality Bureau
New Mexico Environment Department
Harold Runnels Building, Room N2261
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, NM 87502

Subject: Notice of Intent to Conduct a Tracer Study at Los Alamos National Laboratory

Dear Ms. Hunter:

In accordance with Subsection A of 20.6.2.1201 New Mexico Administrative Code (NMAC), the U.S. Department of Energy and Los Alamos National Security, LLC (DOE/LANS) are filing this notice of intent (NOI) to conduct a tracer study at Los Alamos National Laboratory. Tracer deployment will occur at piezometer CrPZ-1. The tracer study will be conducted to evaluate groundwater flow velocities in the immediate vicinity of piezometer CrPZ-1 (near the periphery of the Cr (VI) plume beneath Mortandad Canyon) both with and without CrEX-2 pumping. This information will support the assessment of potential remedial alternatives for the Cr (VI)-contaminated groundwater. Enclosure 1 contains a completed NMED Ground Water Quality Bureau NOI form. Enclosures 2 and 3 provide information to support this notice.

Please contact Robert S. Beers by telephone at (505) 667-7969 or by email at bbeers@lanl.gov if you have questions regarding this NOI.

Sincerely,

John C. Bretzke
Division Leader

Sincerely,

Cheryl L. Rodriguez
Program Manager, FPD-II



ENCLOSURE 1

**Completed NMED GWQB
Notice of Intent (NOI) to Discharge Form**

EPC-DO: 17-128

LA-UR-17-21948

MAR 15 2017

Date: _____



1. **Name and mailing address of person proposing to discharge:**
Stephani F. Swickley
Los Alamos National Security, LLC
P.O. Box 1663, Mail Stop M992
Los Alamos, NM 87544
Point of Contact: Robert S. Beers, 505-667-7969, bbeers@lanl.gov
Work Phone: 505-606-1628
Email: sfuller@lanl.gov
2. **Name of facility:** Los Alamos National Laboratory (LANL).
3. **Physical location of discharge (if applicable, give street address, township, range, section, distance from closest town or landmark, directions to facility, location map):** LANL Technical Area (TA)-05 in Township 19N, Range 6E, Section 24. Enclosure 2 contains a location map of the project site.
4. **Type of operation generating the discharge (e.g., truck wash, food processing plant, restaurant, etc.):**
This tracer study will be conducted to evaluate groundwater flow velocities in the immediate vicinity of piezometer CrPZ-1 (near the periphery of the Cr (VI) plume beneath Mortandad Canyon) both with and without CrEX-2 pumping. This information will support the assessment of potential remedial alternatives for the Cr (VI)-contaminated groundwater.
5. **Source(s) of the discharge. Describe how the wastewater, sludge, or other discharges processed and/or disposed at your facility are generated. Identify all sources. Attach additional pages if needed:**
One or two different nonreactive tracers will be deployed to the regional aquifer through piezometer CrPZ-1 up to a total of 4 times (but possibly less than 4). The tracers include two different naphthalene sulfonates. See Table 1 below.

Table 1. Summary of the proposed tracers, locations, and quantities.

Locale	Unit	Tracer(s)/ Solution	Quantity Injected	Volume of Solution Injected	Notes
CrPZ-1	Regional Aquifer	Na 1,5 NDS or Na 2,6 NDS	2 g	50 gallons	Mix tracer in potable water in 55-gallon drum and inject into CrPZ-1 using a peristaltic pump that is pumping at the same rate as the Bennett pump deployed in CrPZ-1 is pumping out. When tracer is detected in return flow from Bennett pump, stop injecting tracer and allow the Bennett pump to continue to circulate water to the surface with the flow being returned to the piezometer. Samples will be periodically collected at the surface to watch the tracer concentration decline with time.
CrPZ-1	Regional Aquifer	Na 1,5 NDS or Na 2,6 NDS	2 g	50 gallons	Same as above, but deployed after concentrations from the first injection have declined to at least a factor of 100 less than they were immediately after the first injection.
CrPZ-1	Regional Aquifer	Na 1,5 NDS or Na 2,6 NDS	2 g	50 gallons	Same as above, but deployed after concentrations from the previous injection have declined to at least a factor of 100 less than they were immediately after the previous injection.
CrPZ-1	Regional Aquifer	Na 1,5 NDS or Na 2,6 NDS	2 g	50 gallons	Same as above, but deployed after concentrations from the previous injection have declined to at least a factor of 100 less than they were immediately after the previous injection.

Notes:
NDS = Naphthalene disulfonate.



6. Expected contaminants in the discharge (e.g., nitrate-nitrogen, metals, organic compounds, salts, etc.) Include estimated concentration if known, and copies of results of laboratory analyses, if available:

The tracers listed in Table 1 will be introduced at the quantities listed in Table 1. The approximate total mass of tracers used will be as follows.

- ✓ 8 grams of any combination of Na 1,5 NDS and Na 2,6 NDS.

Enclosure 3 provides the Safety Data Sheets (SDSs) for the proposed tracers.

7. Describe all components of wastewater processing, treatment, storage, and disposal system (e.g., grease interceptor, lagoon, septic tank/leachfield, etc.) Include sizes, site layout map, plans and specifications, etc. if available:

- ✓ Regional aquifer piezometer: CrPZ-1
- ✓ Tracers (see Table 1)
- ✓ Treated regional aquifer groundwater from Cr Project wells or potable water from the Los Alamos County Water Supply System

8. Estimated maximum daily discharge volume in gallons per day (or other units):

Total discharge of tracer solution is no more than 200 gallons.

Daily maximum discharge is approximately 50 gallons.

9. Estimated depth to ground water (ft): Approximately 1100 feet below ground surface (bgs).

Signature: _____ Date: _____

Printed name: _____ Title: _____

Please return this form to:
NMED Ground Water Quality Bureau
P.O. Box 5469
Santa Fe, New Mexico 87502-5469

Telephone: 505-827-2900
Fax: 505-827-2965

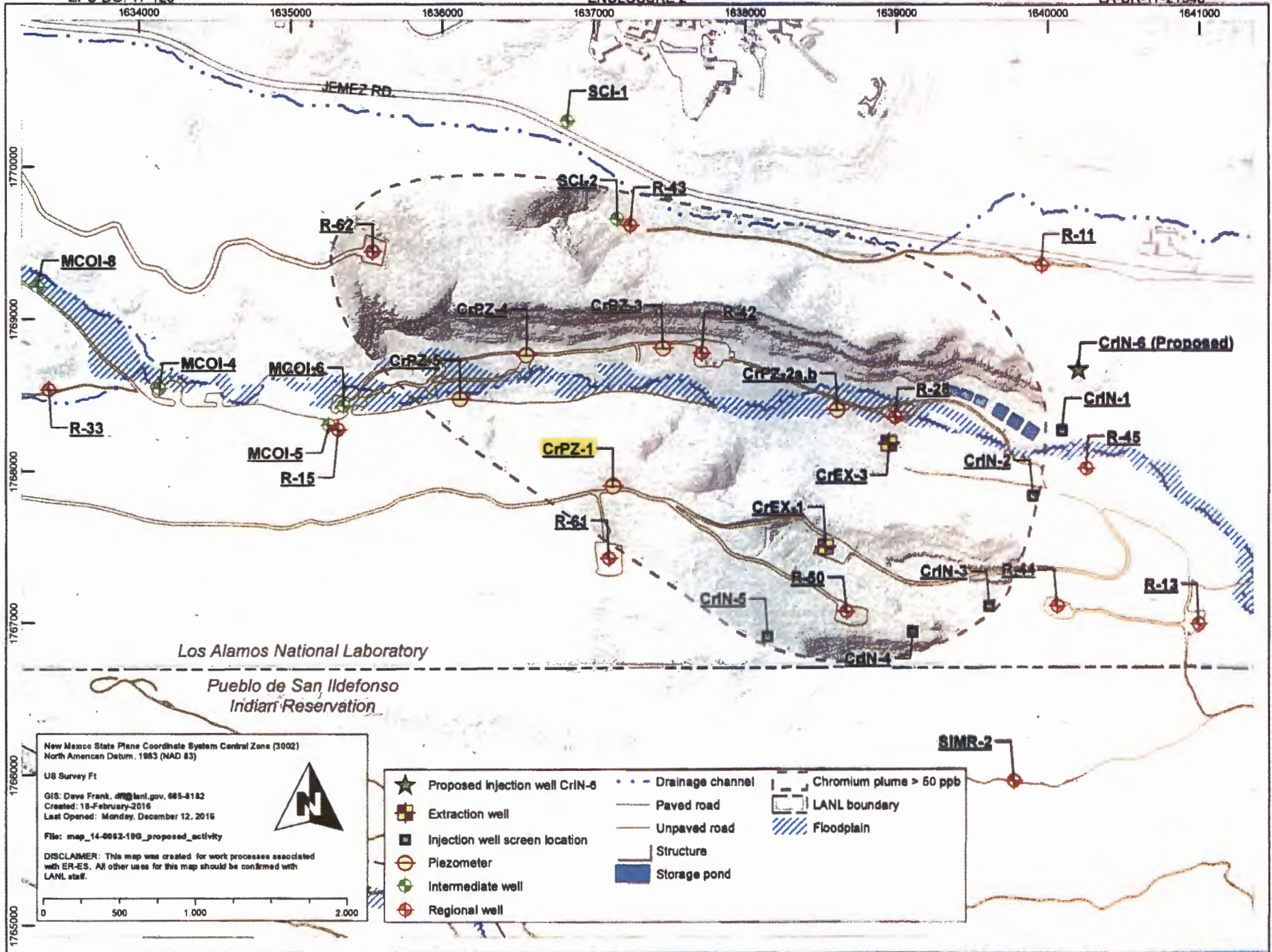
ENCLOSURE 2

Map of the project site

EPC-DO: 17-128

LA-UR-17-21948

Date: **MAR 15 2017**



Los Alamos National Laboratory

Pueblo de San Ildefonso
Indian Reservation

New Mexico State Plane Coordinate System Central Zone (3002)
North American Datum, 1983 (NAD 83)

US Survey Ft

GIS: Dave Frank, dfrank@lanl.gov, 665-8182
Created: 18-February-2016
Last Opened: Monday, December 12, 2016

File: map_14-0062-100_proposed_activity

DISCLAIMER: This map was created for work processes associated
with ER-ES. All other uses for this map should be confirmed with
LANL staff.



- ★ Proposed injection well CrN-6
- ⊠ Extraction well
- ⊡ Injection well screen location
- Piezometer
- ⊕ Intermediate well
- ⊗ Regional well
- - - Drainage channel
- Paved road
- Unpaved road
- Structure
- Storage pond
- ▭ Chromium plume > 60 ppb
- ▭ LANL boundary
- ▨ Floodplain

ENCLOSURE 3

Safety Data Sheets (SDSs) for tracers

EPC-DO: 17-128

LA-UR-17-21948

MAR 15 2017

Date: _____

SIGMA-ALDRICH

sigma-aldrich.com

SAFETY DATA SHEET

Version 5.3

Revision Date 07/03/2014

Print Date 07/28/2015

1. PRODUCT AND COMPANY IDENTIFICATION**1.1 Product Identifiers**

Product name : 2,6-Naphthalenedisulfonic acid disodium salt

Product Number : N605

Brand : Aldrich

CAS-No. : 1655-45-4

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832

Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION**2.1 Classification of the substance or mixture**

Not a hazardous substance or mixture.

2.2 GHS Label elements, including precautionary statements

Not a hazardous substance or mixture.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS**3.1 Substances**

Formula : $C_{10}H_6Na_2O_6S_2$

Molecular Weight : 332.26 g/mol

CAS-No. : 1655-45-4

EC-No. : 216-735-7

No ingredients are hazardous according to OSHA criteria.
No components need to be disclosed according to the applicable regulations.

4. FIRST AID MEASURES**4.1 Description of first aid measures****If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration.

In case of skin contact

Wash off with soap and plenty of water.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

no data available

5. FIREFIGHTING MEASURES**5.1 Extinguishing media****Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Carbon oxides, Sulphur oxides, Sodium oxides

5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information

no data available

6. ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures**

Avoid dust formation. Avoid breathing vapours, mist or gas.

For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE**7.1 Precautions for safe handling**

Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Keep in a dry place.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1 Control parameters****Components with workplace control parameters**

Contains no substances with occupational exposure limit values.

8.2 Exposure controls**Appropriate engineering controls**

General industrial hygiene practice.

Personal protective equipment**Eye/face protection**

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties**

a) Appearance	Form: powder Colour: white
b) Odour	no data available
c) Odour Threshold	no data available
d) pH	no data available
e) Melting point/freezing point	Melting point/range: > 300 °C (> 572 °F) - lit.
f) Initial boiling point and boiling range	no data available
g) Flash point	no data available
h) Evaporation rate	no data available
i) Flammability (solid, gas)	no data available
j) Upper/lower flammability or explosive limits	no data available
k) Vapour pressure	no data available
l) Vapour density	no data available
m) Relative density	no data available
n) Water solubility	no data available
o) Partition coefficient: n-octanol/water	no data available
p) Auto-ignition temperature	no data available
q) Decomposition temperature	no data available
r) Viscosity	no data available
s) Explosive properties	no data available

t) Oxidizing properties no data available

9.2 Other safety information
no data available

10. STABILITY AND REACTIVITY

- 10.1 Reactivity**
no data available
- 10.2 Chemical stability**
Stable under recommended storage conditions.
- 10.3 Possibility of hazardous reactions**
no data available
- 10.4 Conditions to avoid**
no data available
- 10.5 Incompatible materials**
Strong oxidizing agents
- 10.6 Hazardous decomposition products**
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
no data available

Inhalation: no data available

Dermal: no data available
no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitisation
no data available

Germ cell mutagenicity
Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
no data available

no data available

Specific target organ toxicity - single exposure
no data available

Specific target organ toxicity - repeated exposure
no data available

Aspiration hazard

no data available

Additional Information

RTECS: Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION**12.1 Toxicity**

no data available

12.2 Persistence and degradability

no data available

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

no data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods****Product**

Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION**DOT (US)**

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

15. REGULATORY INFORMATION**SARA 302 Components**

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

No SARA Hazards

Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

Disodium naphthalene-2,6-disulphonate

CAS-No.
1655-45-4

Revision Date

New Jersey Right To Know Components

Disodium naphthalene-2,6-disulphonate

CAS-No.
1655-45-4

Revision Date

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION**HMIS Rating**

Health hazard: 0

Chronic Health Hazard:

Flammability: 0

Physical Hazard 0

NFPA Rating

Health hazard: 0

Fire Hazard: 0

Reactivity Hazard: 0

Further information

Copyright 2014 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.3

Revision Date: 07/03/2014

Print Date: 07/28/2015

SIGMA-ALDRICH

sigma-aldrich.com

SAFETY DATA SHEETVersion 3.3
Revision Date 06/25/2014
Print Date 08/28/2014**1. PRODUCT AND COMPANY IDENTIFICATION****1.1 Product Identifiers**

Product name : Sodium 1,5-naphthalenedisulfonate dibasic

Product Number : 70240
Brand : Aldrich

CAS-No. : 1655-29-4

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheetCompany : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USATelephone : +1 800-325-5832
Fax : +1 800-325-5052**1.4 Emergency telephone number**

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION**2.1 Classification of the substance or mixture**

Not a hazardous substance or mixture.

2.2 GHS Label elements, including precautionary statements

Not a hazardous substance or mixture.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none**3. COMPOSITION/INFORMATION ON INGREDIENTS****3.1 Substances**

Synonyms : 1,5-Naphthalenedisulfonic aciddisodium salt

Formula : $C_{10}H_6Na_2O_6S_2$

Molecular Weight : 332.26 g/mol

CAS-No. : 1655-29-4

EC-No. : 216-732-0

No ingredients are hazardous according to OSHA criteria.

No components need to be disclosed according to the applicable regulations.

4. FIRST AID MEASURES**4.1 Description of first aid measures****If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration.

In case of skin contact

Wash off with soap and plenty of water.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

no data available

5. FIREFIGHTING MEASURES**5.1 Extinguishing media****Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Carbon oxides, Sulphur oxides, Sodium oxides

5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information

no data available

6. ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures**

Avoid dust formation. Avoid breathing vapours, mist or gas.

For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE**7.1 Precautions for safe handling**

Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

hygroscopic Keep in a dry place.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1 Control parameters****Components with workplace control parameters**

Contains no substances with occupational exposure limit values.

8.2 Exposure controls**Appropriate engineering controls**

General industrial hygiene practice.

Personal protective equipment**Eye/face protection**

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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Control of environmental exposure

Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties**

a) Appearance	Form: powder Colour: beige
b) Odour	no data available
c) Odour Threshold	no data available
d) pH	no data available
e) Melting point/freezing point	no data available
f) Initial boiling point and boiling range	no data available
g) Flash point	no data available
h) Evaporation rate	no data available
i) Flammability (solid, gas)	no data available
j) Upper/lower flammability or explosive limits	no data available
k) Vapour pressure	no data available
l) Vapour density	no data available
m) Relative density	no data available
n) Water solubility	no data available
o) Partition coefficient: n-octanol/water	no data available
p) Auto-ignition temperature	no data available
q) Decomposition temperature	no data available
r) Viscosity	no data available
s) Explosive properties	no data available

t) Oxidizing properties no data available

9.2 Other safety information
no data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

no data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

no data available

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

Other decomposition products - no data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

no data available

Inhalation: no data available

Dermal: no data available

no data available

Skin corrosion/irritation

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Serious eye damage/eye irritation

no data available

Respiratory or skin sensitisation

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

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NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

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no data available

no data available

Specific target organ toxicity - single exposure

no data available

Specific target organ toxicity - repeated exposure

no data available

Aspiration hazard

no data available

Additional Information

RTECS: Not available

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no data available

13. DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods****Product**

Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION**DOT (US)**

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

15. REGULATORY INFORMATION**SARA 302 Components**

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

No SARA Hazards

Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

Disodium naphthalene-1,5-disulphonate

CAS-No.
1655-29-4

Revision Date

New Jersey Right To Know Components

Disodium naphthalene-1,5-disulphonate

CAS-No.
1655-29-4

Revision Date

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION**HMIS Rating**

Health hazard: 0

Chronic Health Hazard:

Flammability: 0

Physical Hazard 0

NFPA Rating

Health hazard: 0

Fire Hazard: 0

Reactivity Hazard: 0

Further information

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Preparation Information

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Product Safety – Americas Region
1-800-521-8956

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