



SAFETY DATA SHEET

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200.

Section 1: Product and Company Identification

Product Name: **Radnor Developer Nuclear Grade (Aerosol)**
Product Identifier: Nuclear Developer
Product Use: NDT Developer
Item Code(s): 64000206
SDS Code: 031R
Supplier: Radnor
Physical Address: 259 North Radnor - Chester Road - Suite 100
Radnor, PA 19087-5283
Emergency Phone: 866-734-3438
Date of Preparation: March 21, 2019
OSHA Regulatory Status: Regulated
WHMIS Classification: A, B-5, D-2B

Section 2: Hazard Identification

Classification of the Substance or Mixture:

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 2
Flammable aerosols	Category 1
Gases under pressure	Compressed Gas

Emergency Overview

DANGER

Hazard Statements

Causes skin irritation.

Causes serious eye irritation.

May cause respiratory irritation. May cause drowsiness or dizziness.

May cause damage to organs (Central Nervous System, Eyes, Respiratory System, and Skin) through prolonged or repeated exposure.

Extremely flammable aerosol.

Contains gas under pressure; may explode if heated.



Appearance: Opaque

Physical State: Aerosol

Odor: Light Vanilla Scent

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling.

Wear protective gloves/eye protection/face protection.

Do not breathe dust/fume/gas/mist/vapors/spray

Use only outdoors or in a well-ventilated area.

Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

Do not spray on an open flame or other ignition source.

Pressurized container: Do not pierce or burn, even after use.

Precautionary Statements - Response

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

If EYE IRRITATION persists: Get medical advice/attention.

IF ON SKIN: Wash with plenty of soap and water.

If SKIN IRRITATION occurs: Get medical advice/attention.

Take off contaminated clothing and wash before reuse.

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

Call a POISON CENTER or doctor/physician if you feel unwell.

Precautionary Statements - Storage

Store locked up.

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

Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant.

HAZARDS NOT OTHERWISE CLASSIFIED (HNO): None

OTHER INFORMATION

- Toxic to aquatic life with long lasting effects
- 0% of the mixture consists of ingredient(s) of unknown toxicity

Section 3: Composition and Information on Ingredients

Chemical Name	CAS-No	Weight %*
ISOPROPYL ALCOHOL	67-63-0	30-40
PROPANE/ISOBUTANE/N-BUTANE	68476-86-8	20-30
ACETONE	67-64-1	20-30
ZINC STEARATE	67762-34-9	1-10
SURFACE TREATED SILICA	68611-44-9	1-10

*The exact percentage (concentration) of composition has been withheld as a trade secret.

Section 4: First Aid Measures

First Aid Measures for Different Exposure Routes

GENERAL ADVICE: Avoid contact with eyes, skin, and clothing. Avoid breathing, vapors, mist, or gas.

EYE CONTACT: In the case of contact with eyes, rinse immediately with plenty of water for 15 minutes and seek medical advice.

SKIN CONTACT: Wash off immediately with soap and plenty of water. Get medical attention immediately if symptoms occur.

INHALATION: Move to fresh air. If not breathing, give artificial respiration. If breathing has stopped, contact emergency medical services immediately.

INGESTION: Do NOT induce vomiting. Call a physician immediately. Never give anything by mouth to an unconscious person. Risk of product entering the lungs on vomiting after ingestion.

Most Important Symptoms/Effects, Acute and Delayed

MAIN SYMPTOMS: Causes skin and eye irritation. May cause respiratory irritation. Inhalation causing Central Nervous System effects. Ingestion may cause lung damage.

Indication of Immediate Medical Attention and Special Treatment Needed, if Necessary

NOTES TO PHYSICIAN: Treat symptomatically.

Section 5: Fire Fighting Measures

SUITABLE EXTINGUISHING MEDIA: Water fog. Dry chemical. Carbon dioxide (CO₂). Cool containers / tanks with water spray.

UNSUITABLE EXTINGUISHING MEDIA: Do not use a solid water stream as it may scatter and spread fire.

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL: Flammable or extremely flammable aerosol. Container may burst in fire.

Explosion Data

SENSITIVITY TO MECHANICAL IMPACT: None.

SENSITIVITY TO STATIC DISCHARGE: Yes.

PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Use shielding to protect fire-fighters from bursting containers.

Section 6: Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures

PERSONAL PRECAUTIONS: Use with adequate ventilation to keep the exposure levels below the OELS.

Environmental Precautions

ENVIRONMENTAL PRECAUTIONS: Report spills as required by local and federal regulations.

Methods and Materials for Containment and Cleaning Up

METHODS FOR CONTAINMENT: Prevent further leakage or spillage if safe to do so.

METHODS FOR CLEANING UP: Contain liquid and collect with an inert, non-combustible material.

Section 7: Handling and Storage

Precautions for Safe Handling

ADVICE ON SAFE HANDLING: Avoid contact with eyes. Avoid breathing vapors or mists. Contents under pressure. Do not puncture or incinerate cans. Do not stick pin or any other sharp object into opening on top of can. Avoid skin contact. Use with adequate ventilation. Keep container away from heat, flames, and all other sources of ignition. Keep can away from all sources of electricity such as electric motors and batteries. Do not spray on hot surfaces.

Conditions for Safe Storage, Including Any Incompatibilities

TECHNICAL MEASURES/STORAGE CONDITIONS: Keep containers tightly closed in a dry, cool and well-ventilated place.

INCOMPATIBLE PRODUCTS: Store away from strong oxidizers and acids.

AEROSOL LEVEL: 3

Section 8: Exposure Controls / Personal Protection

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
ISOPROPYL ALCOHOL 67-63-0	STEL: 400ppm TWA: 200 ppm	TWA: 400 ppm TWA: 980 mg/m ³ (vacated) TWA: 400 ppm (vacated) TWA: 980 mg/m ³ (vacated) STEL: 500 ppm (vacated) STEL: 1225 mg/m ³	IDLH: 2000 ppm TWA: 400 ppm TWA: 980 mg/m ³ STEL: 500 ppm STEL: 1225 mg/m ³
PROPANE/ISOBUTANE/ N-BUTANE 68476-86-8	74-98-6: TWA: 1000 ppm 106-97-8: STEL: 1000 ppm 75-28-5: STEL: 1000 ppm	74-98-6:TWA: 1000 ppm TWA: 1800 mg/m ³ (vacated) TWA: 1000 ppm (vacated) TWA: 1800 mg/m ³ 106-97-8: (vacated) TWA: 800 ppm (vacated) TWA: 1900 mg/m ³	74-98-6:IDLH: 2100 ppm TWA: 1000 ppm TWA: 1800 mg/m ³ 106-97-8:TWA: 800 ppm TWA: 1900 mg/m ³ 75-28-5:TWA: 800 ppm TWA: 1900 mg/m ³
ACETONE 67-64-1	STEL: 750 ppm TWA: 500 ppm	TWA: 1000 ppm TWA: 2400 mg/m ³ (vacated) TWA: 750 ppm (vacated) TWA: 1800 mg/m ³ (vacated) STEL: 2400 mg/m ³ The acetone STEL does not apply to the cellulose acetate fiber industry. It is in effect for all other sectors (vacated) STEL: 1000 ppm	IDLH: 2500 ppm TWA: 250 ppm TWA: 590 mg/m ³

ACGIH: (American Conference of Governmental Industrial Hygienists)

OSHA: (Occupational Safety & Health Administration)

NIOSH IDLH: Immediately Dangerous to Life or Health

OTHER EXPOSURE GUIDELINES: Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Exposure Controls

ENGINEERING MEASURES: Ventilation systems. Use adequate ventilation to keep the exposure levels below the OELs.

Individual Protection Measures, such as Personal Protective Equipment

EYE/FACE PROTECTION: Safety glasses with side-shields.

SKIN AND BODY PROTECTION: Chemical resistant apron. Protective gloves.

RESPIRATORY PROTECTION: If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

HYGIENE MEASURES: Handle in accordance with good industrial hygiene and safety practice

Section 9: Physical and Chemical Properties

PHYSICAL STATE: Aerosol
APPEARANCE: Opaque
ODOR: Light Vanilla Scent
ODOR THRESHOLD: No information available
COLOR: White

Property	Values	Remarks • Methods
<u>pH</u> :	No information available	Not applicable
<u>MELTING/FREEZING POINT</u> :	No information available	
<u>BOILING POINT/BOILING RANGE</u> :	No information available	
<u>FLASH POINT</u> :	-96.4°C / -141°F	Based on propellant
<u>EVAPORATION RATE</u> :	No information available	
<u>FLAMMABILITY (SOLID, GAS)</u> :	No information available	
<u>FLAMMABILITY LIMITS IN AIR</u> :		
Upper Flammability Limit :	No information available	
Lower Flammability Limit:	No information available	
<u>VAPOR PRESSURE</u> :	No information available	
<u>VAPOR DENSITY</u> :	No information available	
<u>SPECIFIC GRAVITY</u> :	0.757	
<u>WATER SOLUBILITY</u> :	Practically insoluble	
<u>PARTITION COEFFICIENT</u> : n-octanol/water	No information available	
<u>AUTO-IGNITION TEMPERATURE</u> :	No information available	Not applicable
<u>DECOMPOSITION TEMPERATURE</u> :	No information available	
<u>VISCOSITY</u> :	No information available	
<u>EXPLOSIVE PROPERTIES</u> :	No information available	
Other information		
<u>VOC CONTENT (%)</u> :	64.83	

Section 10: Stability and Reactivity

REACTIVITY: No data available

CHEMICAL STABILITY: Stable under recommended storage conditions.

POSSIBILITY OF HAZARDOUS REACTIONS: None under normal processing.

CONDITIONS TO AVOID: Extremes of temperature and direct sunlight.

INCOMPATIBLE MATERIALS: Store away from strong oxidizers and acids.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon oxides.

Section 11: Toxicological Information

Information on Likely Routes of Exposure

PRODUCT INFORMATION: Product does not present an acute toxicity hazard based on known information

INHALATION: Exposure to high vapor concentrations may cause nervous systems effects such as headache, nausea, and dizziness.

EYE CONTACT: Irritating to eyes.

SKIN CONTACT: Irritating to skin. Prolonged skin contact may defat the skin and produce dermatitis.

INGESTION: Not acutely toxic. Aspiration into the lungs during swallowing may cause serious lung damage which may be fatal.

Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
ISOPROPYL ALCOHOL 67-63-0	= 1870 mg/kg (Rat)	= 4059 mg/kg (Rabbit)	= 72600 mg/m ³ (Rat) 4 h
ACETONE 67-64-1	= 5800 mg/kg	20,000 mg/kg (Rabbit)	= 50100 mg/m ³ (Rat) 8 h

Information on Toxicological Effects

SYMPTOMS: Symptoms of overexposure may be headache, dizziness, tiredness, nausea, and vomiting. Causes eye and skin irritation. Prolonged or repeated exposure may cause dermatitis. May respiratory system irritation. May be fatal if swallowed and enters airways.

Delayed and Immediate Effects as well as Chronic Effects from Short and Long-Term Exposure

SKIN CORROSION/IRRITATION: Irritating to skin.

EYE DAMAGE/IRRITATION: Irritating to eyes.

SENSITIZATION: No information available.

GERM CELL MUTAGENICITY: No information available.

CARCINOGENICITY: There are no known carcinogenic chemicals in this product.

REPRODUCTIVE TOXICITY: The ingredients are not reproductive hazards.

SPECIFIC TARGET ORGAN SYSTEMIC TOXICITY (SINGLE EXPOSURE): May cause respiratory irritation. May cause drowsiness and dizziness.

SPECIFIC TARGET ORGAN SYSTEMIC TOXICITY (REPEATED EXPOSURE): May cause damage to organs through prolonged or repeated exposure.

CHRONIC TOXICITY: Intentional misuse by deliberately concentrating and inhaling contents may be harmful or fatal. Chronic hydrocarbon abuse has been associated with irregular heart rhythms and potential cardiac arrest. Prolonged skin contact may defat the skin and produce dermatitis.

TARGET ORGAN EFFECTS: Central Nervous System, Eyes, Respiratory System, Skin.

ASPIRATION HAZARD: No information available.

Numerical Measures of Toxicity - Product Information

UNKNOWN ACUTE TOXICITY: 0% of the mixture consists of ingredient(s) of unknown toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral): 920 mg/kg

ATEmix (dermal): 2501 mg/kg

ATEmix (inhalation-dust/mist): 72.6 mg/l

ATEmix (inhalation-vapor): 106 mg/l

Section 12: Ecological Information

Ecotoxicity

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
ISOPROPYL ALCOHOL 67-63-0	1000 mg/L EC50 Desmodesmus subspicatus 96h 1000 mg/L EC50 Desmodesmus subspicatus 72h	11130 mg/L LC50 Pimephales promelas 96h static 9640 mg/L LC50 Pimephales promelas 96h flow-through 1400000 µg/L LC50 Lepomis macrochirus 96h	-	13299 mg/L EC50 Daphnia magna 48h
PROPANE/ISOBUTANE/ N-BUTANE 68476-86-8	-	-	-	-
ACETONE 67-64-1	-	4.74 - 6.33 mL/L LC50 Oncorhynchus mykiss 96h 6210 - 8120 mg/L LC50 Pimephales promelas 96h static 8300 mg/L LC50 Lepomis macrochirus 96h	-	10294 - 17704 mg/L EC50 Daphnia magna 48h Static 12600 - 12700 mg/L EC50 Daphnia magna 48h

PERSISTENCE AND DEGRADABILITY: No information available.

BIOACCUMULATION: No information available.

Chemical Name	log Pow
ISOPROPYL ALCOHOL 67-63-0	0.05
PROPANE/ISOBUTANE/N-BUTANE 68476-86-8	2.8
ACETONE 67-64-1	-0.24

OTHER ADVERSE EFFECTS: No information available

Section 13: Disposal Considerations

Waste Treatment

WASTE DISPOSAL METHODS: Dispose of in accordance with federal, state, and local regulations.

CONTAMINATED PACKAGING: Do not re-use empty containers

Section 14: Transportation Information

DOT Ground : CONSUMER COMMODITY ORM-D
or
LIMITED QUANTITY

IATA: UN1950, AEROSOLS, FLAMMABLE, 2.1, LTD. QTY.

IMDG: UN1950, AEROSOLS, 2.1, LTD. QTY.

Section 15: Regulatory Information

INTERNATIONAL INVENTORIES

Chemical Name	TSCA	DSL/NDSL	EINECS/ ELINCS	ENCS	IECSC	KECL	PICCS	AICS
ISOPROPYL ALCOHOL	X	X	X	X	X	X	X	X
PROPANE/ISOBUTANE/ N-BUTANE	X	X	X	Not listed	X	X	X	X
ACETONE	X	X	X	X	X	X	X	X
ZINC STEARATE	X	X	X	Not listed	X	X	Not listed	Not listed
SURFACE TREATED SILICA	X	X	X	X	X	X	X	X

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

CHINA - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

U.S. FEDERAL REGULATIONS

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS-No	Weight %*	SARA 313 - Threshold Values %
ISOPROPYL ALCOHOL 67-63-0	67-63-0	30-40	1.0
ZINC STEARATE 67762-34-9	67762-34-9	1-10	1.0

SARA 311/312 Hazard Categories

ACUTE HEALTH HAZARD: Yes

CHRONIC HEALTH HAZARD: Yes

FIRE HAZARD: Yes

SUDDEN RELEASE OF PRESSURE HAZARD: Yes

REACTIVE HAZARD: No

Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical Name	CWA Reportable Quantities	CWA Toxic Pollutants	CWA Priority Pollutants	CWA Hazardous Substances
ZINC STEARATE 67762-34-9		X		

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
ACETONE 67-64-1	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ

U.S. State Regulations**California Proposition 65**

This product does not contain any known Proposition 65 chemicals:

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
ISOPROPYL ALCOHOL 67-63-0	X	X	X
ACETONE 67-64-1	X	X	X
ZINC STEARATE 67762-34-9	X		X

EPA PESTICIDE REGISTRATION NUMBER: Not applicable

Canada

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

Section 16: Other Information

NFPA: Health Hazard | 2 | Flammability | 4 | Instability | 0 | Physical and Chemical Hazards | 1 - 1
HMIS: Health Hazard | 2 | Flammability | 4 | Physical Hazard | 1 | Personal Protection | B |

This SDS format meets ANSI Z400.1-1998, OSHA 1910.1200 and WHMIS requirements. Radnor provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Product use and conditions of use are beyond the control of Radnor. Warranty of materials is limited to test results of product performance as detailed in certificates of compliance. Interpretation of test results is the responsibility of end-user. No other warranties, expressed or implied, are made.