



Safety Data Sheet

Section 1 – Identification of the Mixture and of the Company

Product Identification

Primary Identifier(s) Used on the Label

Berryman *STEP 1 PROFESSIONAL MASS AIR FLOW SENSOR CLEANER*

Product Synonym(s)

blend "MAF"

Product Number(s)

2641

Relevant Identified Uses and Uses Advised Against

Recommended Uses

automotive sensor cleaning

Uses Advised Against

not for use in some applications

Manufacturer/Supplier Details

Berryman Products, Inc.

3800 E Randol Mill Rd

Arlington, TX 76011

(800) 433-1704 (USA/Canada)

(817) 640-2376 (international)

www.BerrymanProducts.com

Emergency 24-Hour Telephone Number(s) – InfoTrac, Inc.

(800) 535-5053 (USA/Canada)

(352) 323-3500 (international)

Section 2 – Hazards Identification

Classification of the Substance or Mixture (29 CFR 1910.1200)

Physical Hazards

Flammable Aerosol – Category 1

Gases Under Pressure – Compressed Gas

Health Hazards

Skin Irritant – Category 2

Eye Irritant – Category 2A

Specific Target Organ Toxicity - Single Exposure – Category 3 (narcotic effects)

Aspiration Hazard – Category 1

Environmental Hazard - Acute – Category 3

Allocation of Label Elements

Chemical Identity

Berryman *STEP 1 PROFESSIONAL MASS AIR FLOW SENSOR CLEANER*

Pictograms



Signal Word

DANGER

Hazard Statements

H222 – Extremely flammable aerosol.
 H280 – Contains gas under pressure; may explode if heated.
 H304 – May be fatal if swallowed and enters airways.
 H315 – Causes skin irritation.
 H319 – Causes serious eye irritation.
 H321 – Specific treatment (see supplemental first aid instructions this label/document).
 H336 – May cause drowsiness or dizziness.
 H411 – Toxic to aquatic life with long-lasting effects.

Prevention Precautionary Statements

P101 – Keep out of reach of children.
 P102 – Read label before use.
 P210 – Keep away from heat, sparks, open flames, and hot surfaces. No smoking.
 P211 – Do not spray on an open flame or other ignition source.
 P251 – Pressurized container—do not pierce or burn, even after use.
 P261 – Avoid breathing gas, mist, vapor, or spray.
 P264 – Wash thoroughly with soap and water after handling.
 P271 – Use only outdoors or in a well-ventilated area.
 P273 – Avoid release to the environment.
 P280 – Wear protective gloves, protective clothing, and eye or face protection.

Response Precautionary Statements

P321 – Specific treatment available in this document in “Section 4 – First Aid Measures.”
 P331 – Do NOT induce vomiting.
 P391 – Collect spillage.
 P301/P310 – IF SWALLOWED: Immediately call POISON CONTROL CENTER, hospital emergency room, or doctor.
 P302/P352 – IF ON SKIN: Wash with plenty of soap and water or shower.
 P304/P340/P312 – IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call POISON CONTROL CENTER, hospital emergency room, or doctor if you feel unwell.
 P305/P351/P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
 P332/P313 – If skin irritation occurs, get medical advice/attention.
 P337/P313 – If eye irritation persists, get medical advice/attention.
 P362/364 – Take off contaminated clothing and launder before reuse.

Storage Precautionary Statements

P405 – Store locked-up.
 P410/P412 – Protect from sunlight. Do not expose to temperatures exceeding 122°F (50°C).

Disposal Precautionary Statements

P501 – Dispose of contents/container in accordance with local, regional, national, and international regulations, as applicable.

Hazards Not Otherwise Classified

none known

Ingredients of unknown acute toxicity

none

Section 3 – Composition/Information on Ingredients

<u>Component</u>	<u>CAS RN</u>	<u>Weight</u>
Heptanes (mixture)	426260-76-6	80-90%
2-Propanol	67-63-0	10-15%
Carbon Dioxide	124-38-9	3-6%

Section 4 – First Aid Measures**Description of First Aid Measures****Ingestion**

Immediately call poison control center, hospital emergency room, or doctor. Do NOT induce vomiting. Drink 1-2 glasses of milk or water.

Eye Contact

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.

Skin Contact

Wash with plenty of soap and water or shower.

Inhalation

Remove person to fresh air and keep comfortable. If experiencing respiratory symptoms or if breathing is difficult, administer oxygen and call poison control center, hospital emergency room, or doctor.

Most Important Symptoms and Effects

Acute/Immediate

headache and lightheadedness; narcotic effects, including dizziness, drowsiness, and loss of coordination

Delayed

drying, cracking, or defatting of the skin

Indications of Need for Immediate Medical Attention and Specific Treatment Required

Indications of Need for Immediate Medical Attention

If shortness of breath, difficulty breathing, spontaneous vomiting occurs, or loss of consciousness, seek immediate medical attention.

Specific Treatment and Notes to Physician

No additional information available

Section 5 – Firefighting Measures

Fire Extinguishing Media

Support for Combustion

Product supports combustion.

Suitable Extinguishing Media

water fog, dry chemical, alcohol-resistant foam, or carbon dioxide

Unsuitable Extinguishing Media

water jet/spray (may cause product to float to surface and reignite)

Special Hazards/Considerations

Combustion Products

Combustion in the presence of air may yield hydrocarbons, carbon monoxide, carbon dioxide, and organic oxygenates.

Special Protective Equipment and Precautions for Firefighters

Special Protective Equipment

Firefighters should employ SCBA and full protective gear, including shield, as product is comprised of low-boiling, flammable solvents and may vent, rupture, or explode violently at elevated temperatures.

Precautions and Procedures

Contains gas under pressure; may explode if heated. Vapors heavier than air. Remove product from area if safe to do so. Use water spray to cool nearby containers.

Section 6 – Accidental Release Measures

Personal and Environmental Precautions

Personal Precautions

Keep away from heat, sparks, open flames, and hot surfaces. No smoking. Avoid breathing gas, mist, vapor, or spray. Wash thoroughly with soap and water after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves, protective clothing, and eye or face protection.

Environmental Precautions

Avoid release to the environment. Prevent contamination of ground water.

Materials and Methods for Containment

Small Spills

Use socks/absorbent mini-booms or other inert barrier if necessary to contain small spills.

Large Spills

Utilize large socks/absorbent booms or other inert barrier to form dam/dike in order to contain spill and prevent further loss.

Materials and Methods for Cleanup

Small Spills

Remove source from area if safe to do so. Use granular sorbent, gel sorbent, vermiculite, cat litter, dirt/earth, pads/rolls, or pillows to absorb spilled material. Remediate affected area as necessary.

Large Spills

Keep upwind from spill. Remove source from area if safe to do so. Use explosion-proof transfer equipment to recover spilled material. Use granular sorbent, gel sorbent, vermiculite, cat litter, dirt/earth, pads/rolls, or pillows to absorb residual material. Remediate affected area as necessary.

Section 7 – Handling and Storage

Precautions for Safe Handling

Personal Precautions

Avoid breathing gas, mist, vapor, or spray. Use only outdoors or in a well-ventilated area. Wear protective gloves, protective clothing, and eye or face protection. Wash thoroughly with soap and water after handling.

Precautions for Safe Handling (cont'd)**Environmental Precautions**

Keep away from heat, sparks, open flames, and hot surfaces. No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use. Avoid release to the environment.

Conditions and Considerations for Safe Storage

Contains gas under pressure; may explode if heated. Protect from sunlight. Do not expose to temperatures exceeding 122°F (50°C). Store locked-up. Store according to NFPA Aerosol Level 3 recommendations.

Section 8 – Exposure Controls/Personal Protection

<u>Component</u>	<u>CAS RN</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
n-Heptane	426260-76-6	500 ppm	400 ppm
2-Propanol	67-63-0	500 ppm	400 ppm
Carbon Dioxide	124-38-9	5000 ppm	5000 ppm

Exposure Controls**Appropriate Engineering Controls**

If practical, use outside with adequate ventilation to minimize exposure.

PPE Overview**Hand Protection**

Use of chemical-resistant gloves (EVAL, neoprene, nitrile/Buna-N, PVA, PVC, or Viton) is recommended.

Eye Protection

Use of safety glasses with wrap-around lens or goggles is recommended.

Respiratory Protection

If necessary, use respiratory protection sufficient to reduce exposure to permissible limits.

Additional Protection

For industrial settings, access to a chemical safety shower with eye wash station is strongly recommended.

Section 9 – Physical and Chemical Properties**Information on Basic Physical and Chemical Properties****Physical State**

liquid

Appearance

clear, colorless

Odor

mild, solvent

Odor Threshold

22 ppm

pH

not relevant

Freezing Point

< -127°F

Boiling Range

179 - 210°F

Flash Point and Method

< 20°F by closed-cup tester

Explosion Limits in Air

1.2 - 7.0% by volume (composite)

Evaporation Rate

2.0 (n-Butyl Acetate=1.0)

Vapor Pressure, as supplied

80 - 120 PSI (typical)

Vapor Density

>1.0

Specific Gravity

0.70 at 68°F

Density

5.8 lb/gal at 68°F

Water Solubility

insoluble

n-Octanol/Water Partition Coefficient (log P_{ow})

3.8 (composite)

Information on Basic Physical and Chemical Properties (cont'd.)

Viscosity

0.5 cSt at 68°F

Volatility

100% by weight

Other Information

VOC Content

95% by weight (consumer products)

VOC Composite Partial Pressure, PPC

39 mm of Hg at 68°F

Section 10 – Stability and Reactivity

Chemical Stability under Normal Conditions of Use

Chemical Stability

Stable under normal conditions of use.

Conditions Affording Instability

none known

Reactivity

not expected

Possibility of Hazardous Reactions

none known

Conditions to Avoid

Avoid direct sunlight and excessive temperatures. Do not puncture, incinerate, or crush. Keep away from heat, sparks, open flames, and hot surfaces. No smoking. If practical, avoid temperatures exceeding flash point.

Incompatible Materials

strong acids; oxidizers; reducing agents;

Hazardous Decomposition Products

none known

Section 11 – Toxicological Information

Likely Routes of Exposure

ingestion, skin contact, eye contact, inhalation

Symptoms Related to Physical, Chemical, and Toxicological Characteristics

Ingestion

Large Quantity

gastrointestinal disturbances, including upset stomach, cramping, nausea, vomiting, and diarrhea

Small Quantity/Incidental Contact

gastrointestinal disturbances, including upset stomach and cramping

Skin Contact

moderate irritation

Eye Contact

moderate eye irritation

Inhalation

headache, lightheadedness; narcotic effects, including dizziness, drowsiness, and loss of coordination; nausea and vomiting

Immediate, Delayed, and Chronic Effects

SHORT-TERM EXPOSURE

Potential Immediate Effects

Ingestion

drying, burning, or irritation of the mouth and throat, gastrointestinal disturbances, nausea and vomiting

Skin Contact

drying of the skin

Eye Contact

blurred vision, temporary corneal damage

Inhalation

shortness of breath or difficulty breathing, headache, dizziness, nausea and vomiting, drowsiness, fatigue, loss of consciousness, death

Potential Delayed Effects

Ingestion

none known

Skin Contact

defatting of the skin, drying and cracking of the skin, aggravation of pre-existing skin conditions

Eye Contact

temporary corneal damage

Inhalation

nausea and vomiting, fatigue, loss of consciousness

LONG-TERM EXPOSURE

Potential Immediate Effects

none known

Potential Delayed Effects

none known

Potential Chronic Health Effects

Carcinogenicity

International Agency for Research on Cancer (IARC) Monographs

all components “Group 3 – Not Classifiable as to Human Carcinogenicity” or not listed

National Toxicology Program (NTP) Report on Carcinogens

not listed

Occupational Safety & Health Administration (OSHA)

not listed

Mutagenicity / Genetic Toxicity

not suspected of being a human mutagen / genetic toxicant

Teratogenicity

not suspected of being a human teratogen

Developmental Effects

not suspected of being a developmental toxicant

Fertility Effects

not suspected of being a reproductive/fertility toxicant

Effects on Lactation

not suspected of affecting lactation

SPECIFIC TARGET ORGAN TOXICITY (STOT)

Single Exposure

central nervous system (narcotic effects)

Repeated Exposure

none known

Numerical Measures of Acute Toxicity

Oral (Rat)

LD₅₀: >5,000 mg/kg (derived)

Dermal (Rabbit)

LD₅₀: 2,230 mg/kg (derived)

Inhalation (Rat)

LC₅₀: 20 mg/L (derived)

Additional Toxicological Information

Skin Irritation/Corrosion (Rabbit)

skin irritant

Serious Eye Damage/Irritation (Rabbit)

eye irritant

Respiratory Sensitization

does not cause respiratory sensitization

Skin Sensitization

does not cause skin sensitization

Aspiration Hazard

known aspiration hazard

Section 12 – Ecological Information

General Ecological Assessment/Overview

Toxic to aquatic life with long-lasting effects.

Aquatic Toxicity

Vertebrates (Fish)

Acute Toxicity

LC₅₀: 4.5 mg/L (derived)

Chronic Toxicity

NOEC: not available

Invertebrates (Water Flea)

Acute Toxicity

LC₅₀: 1.7 mg/L (derived)

Chronic Toxicity

NOEC: not available

Aquatic Plants (Freshwater Algae)

Acute Toxicity

EC₅₀: 4.3 mg/L (derived)

Chronic Toxicity

NOEC: not available

Terrestrial Toxicity

Invertebrate (Earthworm)

LC₅₀: not available

Persistence and Degradability

Persistence

not expected to be persistent

Degradability

rapidly degradable

Bioaccumulative Potential

Bioaccumulation Potential Assessment

may bioaccumulate (n-Heptane)

Bioaccumulation Factor

2,000 (n-Heptane)

Mobility in Soils

Mobility in Soils Assessment

not mobile in soils

Soil Organic Carbon/Water Partition Coefficient (log K_{oc})

3.8 (composite)

Results of PBT and vPvB Assessment

not a persistent, bioaccumulative, toxic chemical (PBT); not very persistent and very bioaccumulative (vPvB)

Other Adverse Effects

none known

Section 13 – Disposal Considerations

General Assessment/Overview

Dispose of waste in accordance with all applicable regulations. Toxic to aquatic life with long-lasting effects—do not pour into waterways.

RCRA Hazardous Waste Code(s) (40 CFR 261.20-33)

Based on this material as-supplied, used or unwanted product may be subject to RCRA regulations and classified as D001 – ignitable waste

Section 14 – Transportation Information

Transportation by Ground – US Department of Transportation

Shipping Description

UN1950, Aerosols, 2.1

Exemption Eligibility

When shipped by ground, this product may be eligible for a “Limited Quantity” exception per §49 CFR 173.306.

Transportation by Air – ICAO/IATA

Shipping Description

UN1950, Aerosols, Flammable, 2.1

Exemption Eligibility

When shipped by air, this product may be eligible for a “Limited Quantity” exception.

Transportation by Water – IMO/IMDG**Shipping Description**

UN1950, Aerosols, 2.1

Exemption Eligibility

When shipped by water, this product may be eligible for a “Limited Quantity” exception.

Section 15 – Regulatory Information**Safety, Health, and Environmental Regulations/Legislation*****UNITED STATES – SELECT FEDERAL REGULATIONS*****Environmental Protection Agency (EPA)****Toxic Substances Control Act (TSCA) (15 USC 2601, et seq.)**

All chemicals known to be present in this product are either listed on the TSCA inventory or are not required to be.

SARA Title III (42 USC 9601, et seq.)**Section 302 – Extremely Hazardous Substances (40 CFR 355)**

none

Section 304 – Emergency Release Notification (40 CFR 302.4)

none

Section 311/312 – Hazard Categorization (40 CFR 370.40)

acute toxicity, fire hazard, sudden release of pressure

Section 313 – Toxic Chemicals (40 CFR 372.65)

none

Clean Air Act (42 USC 7401, et seq.)**Section 112 – Hazardous Air Pollutants**

none

Section 183(e) – Commercial and Consumer Products – VOC Limit and Category (40 CFR 59 subpart C)

not regulated

Occupational Safety & Health Administration (OSHA)**Hazard Communication Standard**

This safety data sheet (SDS) is provided for compliance with applicable regulations of the Hazard Communication Standard of 2012 (HCS/HAZCOM 2012) found in §29 CFR 1910.1200. Federal law requires persons receiving this document to study it carefully, become aware of the hazards of this product, and notify all employees, visitors, agents, and contractors of the information contained herein.

Consumer Product Safety Commission**Federal Hazardous Substances Act**

This product is regulated under the Federal Hazardous Substances Act, is subject to the labeling requirements of 16 CFR 1500, and must include at minimum the following cautionary statements: DANGER: Extremely Flammable. Eye and skin irritant. Contents under pressure. Keep out of the reach of children.

UNITED STATES – SELECT REGIONAL CONSIDERATIONS**Ozone Transport Commission (OTC) – Model Rule VOC Limit and Category**

not regulated

Lake Michigan Air Directors Consortium (LADCO) – Model Rule VOC Limit and Category

not regulated

UNITED STATES – SELECT STATE REGULATIONS**California****Office of Environmental Health Hazard Assessment (OEHHHA)****Proposition 65 – Safe Drinking Water and Toxic Enforcement Act of 1986**

This product is not subject to the labeling requirements of Proposition 65 – Safe Drinking Water and Toxic Enforcement Act of 1986.

Air Resources Board (ARB/CARB)**Regulation for Reducing Emissions from Consumer Products – VOC Limit and Category**

not regulated

Massachusetts**“Right-to-Know” Legislation – Substance List (105 CMR 670.000)**

Heptane, 2-Propanol, Carbon Dioxide

New Jersey**“Right-to-Know” Legislation – Hazardous Substance List (34:5A-1, et seq.)**

Heptane, 2-Propanol, Carbon Dioxide

Pennsylvania**“Right-to-Know” Legislation – Hazardous Substance List (Chapter 323)**

Heptane, 2-Propanol, Carbon Dioxide

INTERNATIONAL – SELECT REGULATIONS**Canada****Environment Canada – Domestic Substances List (DSL)**

All chemicals known to be present in this product are listed on the DSL.

China**Ministry of Environmental Protection – Inventory of Existing Chemical Substances Produced or Imported in China (IECSC)**

All chemicals known to be present in this product are listed on the IECSC.

European Union**European Chemical Agency – European Inventory of Existing Chemical Substances (EINECS)**

All chemicals known to be present in this product are listed on the EINECS.

Chemical Safety Assessment

has not been conducted on product, as-supplied

Section 16 – Other Information**Hazardous Materials Information System (HMIS)**

Health	2	Hazard Index
Flammability	3	Least - 0
Reactivity	0	Slight - 1
Protective Equipment	B	Moderate - 2
		High - 3
		Extreme - 4

Index of Abbreviations

ACGIH – American Council of Governmental and Industrial Hygienists

CAS RN – Chemical Abstracts Service Registry Number

EC₅₀ – Median Effective Concentration

IATA – International Air Transport Association

ICAO – International Civil Aviation Organization

IMDG – International Maritime Dangerous Goods

IMO – International Maritime Organization

LC₅₀ – Median Lethal Concentration

LD₅₀ – Median Lethal Dose

N/A – Not Applicable

NE – Not Established

NFPA – National Fire Protection Association

NOEC – No Observable Exposure Concentration

PEL – Permissible Exposure Limit (as required by OSHA)

TLV – Threshold Limit Value (as recommended by ACGIH)

VOC – Volatile Organic Compound

Relevant Dates and Applicability**Date of Issuance**

January 24, 2019

Date of Previous Revision

January 11, 2018

Primary Revision Change(s)

General update

Document Applicability

This safety data sheet applies only to part numbers 2641.

Document Author

Dan Nowlan

Legal Disclaimer

The information contained in this document is, to the best of Berryman Products, Inc.'s knowledge, complete and accurate but is not warranted. All materials may present unknown hazards and should be used with caution. It is the responsibility of the user to evaluate the information in a prudent manner and to use it in a manner consistent with its intended purpose. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.



Safety Data Sheet

Section 1 – Identification of the Mixture and of the Company

Product Identification

Primary Identifier(s) Used on the Label

Berryman *STEP 2 PROFESSIONAL AIR-INTAKE & THROTTLE BODY CLEANER*

Product Synonym(s)

blend "1AD-2"

Product Number(s)

2642

Relevant Identified Uses and Uses Advised Against

Recommended Uses

automotive air-intake and throttle body cleaner

Uses Advised Against

do not spray through air cleaner or onto mass air flow sensor

Manufacturer/Supplier Details

Berryman Products, Inc.

3800 E Randol Mill Rd

Arlington, TX 76011

(800) 433-1704 (USA/Canada)

(817) 640-2376 (international)

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Emergency 24-Hour Telephone Number(s) – InfoTrac, Inc.

(800) 535-5053 (USA/Canada)

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Section 2 – Hazards Identification

Classification of the Substance or Mixture (29 CFR 1910.1200)

Physical Hazards

Flammable Aerosol – Category 1

Gases Under Pressure – Compressed Gas

Health Hazards

Skin Irritant – Category 2

Eye Irritant – Category 2A

Specific Target Organ Toxicity - Single Exposure – Category 3 (narcotic effects)

Specific Target Organ Toxicity - Repeated Exposure – Category 2 (blood/blood system)

Allocation of Label Elements

Chemical Identity

Berryman *STEP 2 PROFESSIONAL AIR-INTAKE & THROTTLE BODY CLEANER*

Pictograms



Allocation of Label Elements (cont'd)

Signal Word

DANGER

Hazard Statements

H222 – Extremely flammable aerosol.

H280 – Contains gas under pressure; may explode if heated.

H315 – Causes skin irritation.

H319 – Causes serious eye irritation.

H336 – May cause drowsiness or dizziness.

H373 – May cause damage to blood/blood system and central nervous system through prolonged or repeated exposure.

Prevention Precautionary Statements

P101 – Keep out of reach of children.

P102 – Read label before use.

P210 – Keep away from heat, sparks, open flames, and hot surfaces. No smoking.

P211 – Do not spray on an open flame or other ignition source.

P251 – Do not pierce or burn, even after use.

P260 – Do not breathe fumes, gas, mist, vapor, or spray.

P264 – Wash thoroughly with soap and water after handling.

P271 – Use only outdoors or in a well-ventilated area.

P280 – Wear protective gloves, protective clothing, and eye or face protection.

Response Precautionary Statements

P314 – Get medical advice/attention if you feel unwell.

P321 – Specific treatment available in this document in “Section 4 – First Aid Measures.”

P302/P352 – IF ON SKIN: Wash with plenty of soap and water or shower.

P304/P340/312 – IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call POISON CONTROL CENTER, hospital emergency room, or doctor if you feel unwell.

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

P332/P313 – If skin irritation occurs, get medical advice/attention.

P337/P313 – If eye irritation persists, get medical advice/attention.

P362/364 – Take off contaminated clothing and launder before reuse.

Storage Precautionary Statements

P405 – Store locked-up.

P410/P412 – Protect from sunlight. Do not expose to temperatures exceeding 122°F (50°C).

Disposal Precautionary Statements

P501 – Dispose of contents/container in accordance with local, regional, national, and international regulations, as applicable.

Hazards Not Otherwise Classified

none known

Ingredients of unknown acute toxicity

none

Section 3 – Composition/Information on Ingredients

<u>Component</u>	<u>CAS RN</u>	<u>Weight</u>
Acetone	67-64-1	40-50%
Methyl Acetate	79-20-9	30-40%
Methyl Ethyl Ketone	78-93-3	4-8%
2-Butoxyethanol	111-76-2	4-8%
Carbon Dioxide	124-38-9	4-8%
Petroleum Oil	64742-65-0	1-2%

Section 4 – First Aid Measures**Description of First Aid Measures****Ingestion**

Drink 1-2 glasses of milk or water. Call poison control center, hospital emergency room, or doctor if you feel unwell.

Eye Contact

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.

Skin Contact

Wash with plenty of soap and water or shower.

Inhalation

Remove person to fresh air and keep comfortable. If experiencing respiratory symptoms or if breathing is difficult, administer oxygen and call poison control center, hospital emergency room, or doctor.

Most Important Symptoms and Effects

Acute/Immediate

headache and lightheadedness; narcotic effects, including dizziness, drowsiness, and loss of coordination; nausea and vomiting

Delayed

drying, cracking, or defatting of the skin

Indications of Need for Immediate Medical Attention and Specific Treatment Required

Indications of Need for Immediate Medical Attention

In the event of shortness of breath or difficulty breathing, seek immediate medical attention.

Specific Treatment and Notes to Physician

no additional information available

Section 5 – Firefighting Measures

Fire Extinguishing Media

Support for Combustion

Product supports combustion.

Suitable Extinguishing Media

water fog, dry chemical, alcohol-resistant foam, or carbon dioxide

Unsuitable Extinguishing Media

water jet/spray (may cause product to float to surface and reignite)

Special Hazards/Considerations

Combustion Products

Combustion in the presence of air may yield unburned hydrocarbons, carbon monoxide, carbon dioxide, and organic oxygenates.

Special Protective Equipment and Precautions for Firefighters

Special Protective Equipment

Firefighters should employ SCBA and full protective gear, including shield, as product is comprised of low-boiling, flammable solvents and may vent, rupture, or explode violently at elevated temperatures.

Precautions and Procedures

Contains gas under pressure; may explode if heated. Vapors heavier than air. Remove product from area if safe to do so. Use water spray to cool nearby containers.

Section 6 – Accidental Release Measures

Personal and Environmental Precautions

Personal Precautions

Keep away from heat, sparks, open flames, and hot surfaces. No smoking. Do not breathe mist, vapor, or spray. Wash thoroughly with soap and water after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves, protective clothing, and eye or face protection.

Environmental Precautions

Avoid release to the environment. Prevent contamination of ground water.

Materials and Methods for Containment

Small Spills

Use socks/absorbent mini-booms or other inert barrier if necessary to contain small spills.

Large Spills

Use large socks/absorbent booms or other inert barrier to form a dam/dike in order to contain large spills and prevent further loss.

Materials and Methods for Cleanup

Small Spills

Remove source from area if safe to do so. Use granular sorbent, gel sorbent, vermiculite, cat litter, dirt/earth, pads/rolls, or pillows to absorb spilled material. Remediate affected area as necessary.

Large Spills

Keep upwind from spill. Remove source from area if safe to do so. Use explosion-proof transfer equipment to recover spilled material. Use granular sorbent, gel sorbent, vermiculite, cat litter, dirt/earth, pads/rolls, or pillows to absorb residual material. Remediate affected area as necessary.

Section 7 – Handling and Storage

Precautions for Safe Handling

Personal Precautions

Do not breathe fumes, gas, mist, vapor, or spray. Use only outdoors or in a well-ventilated area. Wear protective gloves, protective clothing, and eye or face protection. Wash thoroughly with soap and water after handling.

Environmental Precautions

Keep away from heat, sparks, open flames, and hot surfaces. No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use. Avoid release to the environment.

Conditions and Considerations for Safe Storage

Contains gas under pressure; may explode if heated. Protect from sunlight. Do not expose to temperatures exceeding 122°F (50°C). Store locked-up. Store according to NFPA Aerosol Level 2 recommendations.

Section 8 – Exposure Controls/Personal Protection

<u>Component</u>	<u>CAS RN</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Acetone	67-64-1	1000 ppm	500 ppm
Methyl Acetate	79-20-9	200 ppm	200 ppm
Methyl Ethyl Ketone	78-93-3	200 ppm	200 ppm
2-Butoxyethanol	111-76-2	50 ppm	20 ppm
Carbon Dioxide	124-38-9	5000 ppm	5000 ppm
Petroleum Oil (as oil mist)	64742-65-0	5 mg/m ³	5 mg/m ³

Exposure Controls

Appropriate Engineering Controls

If practical, use outside with adequate ventilation to minimize exposure.

PPE Overview

Hand Protection

Use of chemical-resistant gloves (butyl rubber, EVAL, neoprene, nitrile/Buna-N, PVA, PVC, or Viton) is recommended.

Eye Protection

Use of safety glasses with wrap-around lens or goggles is recommended.

Respiratory Protection

If necessary, use respiratory protection sufficient to reduce exposure to permissible limits.

Additional Protection

For industrial settings, access to a chemical safety shower with eye wash station is strongly recommended.

Section 9 – Physical and Chemical Properties

Information on Basic Physical and Chemical Properties

Physical State

liquid

Appearance

clear, colorless

Odor

mild, solvent

Odor Threshold

0.5 ppm

pH

not relevant

Freezing Point

<-107°F

Boiling Range

133 - 1100°F

Flash Point and Method

<20°F by closed-cup tester

Explosion Limits in Air

2.2 - 13.2% by volume (composite)

Evaporation Rate

5.1 (n-Butyl Acetate=1.0)

Vapor Pressure, as supplied

80-120 PSI (typical)

Information on Basic Physical and Chemical Properties (cont'd)**Vapor Density**

>1.0

Specific Gravity

0.844 at 68°F

Density

7.03 lb/gal at 68°F

Water Solubility

practically insoluble

n-Octanol/Water Partition Coefficient (log P_{ow})

0.1 (composite)

Viscosity

0.4 cSt at 68°F

Volatility

95-99% by weight

Auto-ignition temperature

>800°F (composite)

Other Information**VOC Content**

10% by weight (EPA Method 24)

10% by weight (consumer products)

VOC Composite Partial Pressure, PP_c

3.7 mm of Hg at 68°F

Section 10 – Stability and Reactivity**Chemical Stability under Normal Conditions of Use****Chemical Stability**

Stable under normal conditions of use.

Conditions Affording Instability

none known

Reactivity

not expected

Possibility of Hazardous Reactions

none expected

Conditions to Avoid

Avoid direct sunlight and excessive temperatures. Do not puncture, incinerate, or crush. Keep away from heat, sparks, open flames, and hot surfaces. No smoking. If practical, avoid temperatures exceeding flash point.

Incompatible Materials

strong acids; oxidizers; reducing agents

Hazardous Decomposition Products

none known

Section 11 – Toxicological Information**Likely Routes of Exposure**

ingestion, skin contact, eye contact, inhalation

Symptoms Related to Physical, Chemical, and Toxicological Characteristics**Ingestion****Large Quantity**

gastrointestinal disturbances, including upset stomach, cramping, nausea, vomiting, and diarrhea

Small Quantity/Incidental Contact

virtually nontoxic after single ingestion of small quantity

Skin Contact

moderate irritation

Eye Contact

severe eye irritation

Inhalation

respiratory tract irritation; headache, lightheadedness; narcotic effects, including dizziness, drowsiness, and loss of coordination

Immediate, Delayed, and Chronic Effects

SHORT-TERM EXPOSURE

Potential Immediate Effects

Ingestion

drying, burning, or irritation of the mouth and throat, gastrointestinal disturbances, nausea and vomiting

Skin Contact

drying of the skin

Eye Contact

temporary corneal damage

Inhalation

shortness of breath or difficulty breathing, headache, dizziness, nausea and vomiting, drowsiness, fatigue, loss of consciousness

Potential Delayed Effects

Ingestion

none known

Skin Contact

defatting of the skin, drying and cracking of the skin, aggravation of pre-existing skin conditions

Eye Contact

temporary corneal damage

Inhalation

fatigue

LONG-TERM EXPOSURE

Potential Immediate Effects

none known

Potential Delayed Effects

none known

Potential Chronic Health Effects

Carcinogenicity

International Agency for Research on Cancer (IARC) Monographs

all components "Group 3 – Not Classifiable as to Human Carcinogenicity" or not listed

National Toxicology Program (NTP) Report on Carcinogens

not listed

Occupational Safety & Health Administration (OSHA)

not listed

Mutagenicity / Genetic Toxicity

not suspected of being a human mutagen / genetic toxicant

Teratogenicity

not suspected of being a human teratogen

Developmental Effects

not suspected of being a developmental toxicant

Fertility Effects

not suspected of being a reproductive/fertility toxicant

Effects on Lactation

not suspected of affecting lactation

SPECIFIC TARGET ORGAN TOXICITY (STOT)

Single Exposure

central nervous system (narcotic effects)

Repeated Exposure

blood/blood system effects

Numerical Measures of Acute Toxicity

Oral (Rat)

LD₅₀: 4,000 mg/kg (derived)

Dermal (Rabbit)

LD₅₀: 4,890 mg/kg (derived)

Inhalation (Rat)

LC₅₀: 32 mg/L (derived)

Additional Toxicological Information

Skin Irritation/Corrosion (Rabbit)

skin irritant

Serious Eye Damage/Irritation (Rabbit)

eye irritant

Additional Toxicological Information (cont'd)

Respiratory Sensitization

does not cause respiratory sensitization

Skin Sensitization

does not cause skin sensitization

Aspiration Hazard

not an aspiration hazard

Section 12 – Ecological Information

General Ecological Assessment/Overview

Very mobile in soils which may lead to contamination of groundwater.

Aquatic Toxicity

Vertebrates (Fish)

Acute Toxicity

LC₅₀: >100 mg/L (derived)

Chronic Toxicity

NOEC: not available

Invertebrates (Water Flea)

Acute Toxicity

LC₅₀: >100 mg/L (derived)

Chronic Toxicity

NOEC: not available

Aquatic Plants (Freshwater Algae)

Acute Toxicity

EC₅₀: >100 mg/L (derived)

Chronic Toxicity

NOEC: >100 mg/L (derived)

Terrestrial Toxicity

Invertebrate (Earthworm)

LC₅₀: not available

Persistence and Degradability

Persistence

not expected to be persistent

Degradability

rapidly degradable

Bioaccumulative Potential

Bioaccumulation Potential Assessment

does not bioaccumulate

Bioaccumulation Factor

500 (petroleum oil)

Mobility in Soils

Mobility in Soils Assessment

very mobile in soils—may contaminate groundwater

Soil Organic Carbon/Water Partition Coefficient (log K_{oc})

3.3 (composite)

Results of PBT and vPvB Assessment

not a persistent, bioaccumulative, toxic chemical (PBT)

not very persistent and very bioaccumulative (vPvB)

Other Adverse Effects

none known

Section 13 – Disposal Considerations

General Assessment/Overview

Dispose of waste in accordance with all applicable regulations. Contains aggressive solvents, which may dissolve PVC pipes and fittings—do not pour down drain.

RCRA Hazardous Waste Code(s) (40 CFR 261.20-33)

Based on this material as-supplied, used or unwanted product may be subject to RCRA regulations and classified as F003 – spent non-halogenated solvent mixture containing acetone, methanol, and/or xylene

Section 14 – Transportation Information**Transportation by Ground – US Department of Transportation****Shipping Description**

UN1950, Aerosols, 2.1

Exemption Eligibility

When shipped by ground, this product may be eligible for a “Limited Quantity” exception per §49 CFR 173.306.

Transportation by Air – ICAO/IATA**Shipping Description**

UN1950, Aerosols, Flammable, 2.1

Exemption Eligibility

When shipped by air, this product may be eligible for a “Limited Quantity” exception.

Transportation by Water – IMO/IMDG**Shipping Description**

UN1950, Aerosols, 2.1

Exemption Eligibility

When shipped by water, this product may be eligible for a “Limited Quantity” exception.

Section 15 – Regulatory Information**Safety, Health, and Environmental Regulations/Legislation*****UNITED STATES – SELECT FEDERAL REGULATIONS*****Environmental Protection Agency (EPA)****Toxic Substances Control Act (TSCA) (15 USC 2601, et seq.)**

All chemicals known to be present in this product are either listed on the TSCA inventory or are not required to be.

SARA Title III (42 USC 9601, et seq.)**Section 302 – Extremely Hazardous Substances (40 CFR 355)**

none

Section 304 – Emergency Release Notification (40 CFR 302.4)

Acetone, Methyl Ethyl Ketone

Section 311/312 – Hazard Categorization (40 CFR 370.40)

acute toxicity, chronic toxicity, fire hazard, sudden release of pressure

Section 313 – Toxic Chemicals (40 CFR 372.65)

2-Butoxyethanol (“certain glycol ethers”), Methyl Ethyl Ketone

Clean Air Act (42 USC 7401, et seq.)**Section 112 – Hazardous Air Pollutants**

Methyl Ethyl Ketone

Section 183(e) – Commercial and Consumer Products – VOC Limit and Category (40 CFR 59 subpart C)

not regulated

Occupational Safety & Health Administration (OSHA)**Hazard Communication Standard**

This safety data sheet (SDS) is provided for compliance with applicable regulations of the Hazard Communication Standard of 2012 (HCS/HAZCOM 2012) found in §29 CFR 1910.1200. Federal law requires persons receiving this document to study it carefully, become aware of the hazards of this product, and notify all employees, visitors, agents, and contractors of the information contained herein.

Consumer Product Safety Commission (CPSC)**Federal Hazardous Substances Act (FHSA)**

This product is regulated under the Federal Hazardous Substances Act, is subject to the labeling requirements of 16 CFR 1500, and must include at minimum the following cautionary statements: DANGER: Extremely Flammable. Eye and skin irritant. Contents under pressure. Keep out of the reach of children.

UNITED STATES – SELECT REGIONAL CONSIDERATIONS**Ozone Transport Commission (OTC) – Model Rule VOC Limit and Category**

10% as “Carburetor or Fuel-injection Air Intake Cleaner” (complies)

Lake Michigan Air Directors Consortium (LADCO) – Model Rule VOC Limit and Category

45% as “Carburetor or Fuel-injection Air Intake Cleaner” (complies)

UNITED STATES – SELECT STATE REGULATIONS**California****Office of Environmental Health Hazard Assessment (OEHHA)****Proposition 65 – Safe Drinking Water and Toxic Enforcement Act of 1986**

This product is not subject to the labeling requirements of Proposition 65 – Safe Drinking Water and Toxic Enforcement Act of 1986.

Air Resources Board (ARB/CARB)**Regulation for Reducing Emissions from Consumer Products – VOC Limit and Category**

10% as “Carburetor or Fuel-injection Air Intake Cleaner” (complies)

Massachusetts**“Right-to-Know” Legislation – Substance List (105 CMR 670.000)**

Acetone, Methyl Acetate, Methyl Ethyl Ketone (MEK), 2-Butoxyethanol, Carbon Dioxide

New Jersey**“Right-to-Know” Legislation – Hazardous Substance List (34:5A-1, et seq.)**

Acetone, Methyl Acetate, Methyl Ethyl Ketone, 2-Butoxyethanol, Carbon Dioxide

Pennsylvania**“Right-to-Know” Legislation – Hazardous Substance List (Chapter 323)**

2-Propanone; Acetic Acid, Methyl Ester; 2-Butanone; 2-Butoxyethanol; Carbon Dioxide

INTERNATIONAL – SELECT REGULATIONS**Canada****Environment Canada – Domestic Substances List (DSL)**

All chemicals known to be present in this product are listed on the DSL.

China**Ministry of Environmental Protection – Inventory of Existing Chemical Substances Produced or Imported in China (IECSC)**

All chemicals known to be present in this product are listed on the IECSC.

European Union**European Chemical Agency – European Inventory of Existing Chemical Substances (EINECS)**

All chemicals known to be present in this product are listed on the EINECS.

Chemical Safety Assessment

has not been conducted on product, as-supplied

Section 16 – Other Information**Hazardous Materials Information System (HMIS)**

Health	* 2	Hazard Index
Flammability	3	Least - 0
Reactivity	0	Slight - 1
Protective Equipment	B	Moderate - 2
		High - 3
		Extreme - 4

Index of Abbreviations

ACGIH – American Council of Governmental and Industrial Hygienists

CAS RN – Chemical Abstracts Service Registry Number

EC₅₀ – Median Effective Concentration

IATA – International Air Transport Association

ICAO – International Civil Aviation Organization

IMDG – International Maritime Dangerous Goods

IMO – International Maritime Organization

LC₅₀ – Median Lethal Concentration

LD₅₀ – Median Lethal Dose

N/A – Not Applicable

NE – Not Established

NFPA – National Fire Protection Association

NOEC – No Observable Exposure Concentration

PEL – Permissible Exposure Limit (as required by OSHA)

TLV – Threshold Limit Value (as recommended by ACGIH)

VOC – Volatile Organic Compound

Relevant Dates and Applicability

Date of Issuance

January 23, 2019

Date of Previous Revision

N/A—initial SDS

Primary Revision Change(s)

N/A

Document Applicability

This safety data sheet applies to part number 2642 manufactured on or after November 1, 2018.

Document Author

Dan Nowlan

Legal Disclaimer

The information contained in this document is, to the best of Berryman Products, Inc.'s knowledge, complete and accurate but is not warranted. All materials may present unknown hazards and should be used with caution. It is the responsibility of the user to evaluate the information in a prudent manner and to use it in a manner consistent with its intended purpose. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.



Safety Data Sheet

Section 1 – Identification of the Mixture and of the Company

Product Identification

Primary Identifier(s) Used on the Label

Berryman *STEP 3 PROFESSIONAL INTAKE VALVE & COMBUSTION CHAMBER CLEANER*

Product Synonym(s)

blend "IV3C"

Product Number(s)

2643

Relevant Identified Uses and Uses Advised Against

Recommended Uses

automotive intake valve and combustion chamber cleaner

Uses Advised Against

not for use in diesel engines

Manufacturer/Supplier Details

Berryman Products, Inc.

3800 E Randol Mill Rd

Arlington, TX 76011

(800) 433-1704 (USA/Canada)

(817) 640-2376 (international)

www.BerrymanProducts.com

Emergency 24-Hour Telephone Number(s) – InfoTrac, Inc.

(800) 535-5053 (USA/Canada)

(352) 323-3500 (international)

Section 2 – Hazards Identification

Classification of the Substance or Mixture (29 CFR 1910.1200)

Physical Hazards

Flammable Aerosol – Category 1

Gases Under Pressure – Compressed Gas

Health Hazards

Acute Oral – Category 4

Acute Dermal – Category 4

Acute Inhalation – Category 3

Skin Irritant – Category 2

Eye Irritant – Category 2A

Developmental – Category 2

Specific Target Organ Toxicity - Single Exposure – Category 1 (central nervous system, eyes)

Specific Target Organ Toxicity - Repeated Exposure – Category 2 (blood/blood system)

Allocation of Label Elements

Chemical Identity

Berryman *STEP 3 PROFESSIONAL INTAKE VALVE & COMBUSTION CHAMBER CLEANER*

Pictograms



Signal Word

DANGER

Hazard Statements

H222 – Extremely flammable aerosol.

H280 – Contains gas under pressure; may explode if heated.

H302 – Harmful if swallowed.

H312 – Harmful in contact with skin.

H315 – Causes skin irritation.

H319 – Causes serious eye irritation.

H331 – Toxic if inhaled.

H361d – Suspected of damaging the unborn child.

H370 – Causes damage to organs.

H373 – May cause damage to blood/blood system and central nervous system through prolonged or repeated exposure.

Prevention Precautionary Statements

P101 – Keep out of reach of children.

P102 – Read label before use.

P201 – Obtain special instructions before use.

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

P210 – Keep away from heat, sparks, open flames, and hot surfaces. No smoking.

P211 – Do not spray on an open flame or other ignition source.

P251 – Do not pierce or burn, even after use.

P260 – Do not breathe fumes, gas, mist, vapor, or spray.

P264 – Wash thoroughly with soap and water after handling.

P270 – Do not eat, drink or smoke when using this product.

P271 – Use only outdoors or in a well-ventilated area.

P280 – Wear protective gloves, protective clothing, and eye or face protection.

Response Precautionary Statements

P311 – Call POISON CONTROL CENTER, hospital emergency room, or doctor.

P321 – Specific treatment available in this document in “Section 4 – First Aid Measures.”

P330 – Rinse mouth.

P301/P312 – IF SWALLOWED: Immediately call POISON CONTROL CENTER, hospital emergency room, or doctor if you feel unwell.

P303/P361/P353/P312 – IF ON SKIN (OR HAIR): Immediately take off all contaminated clothing. Rinse skin with soap and water or shower. Call POISON CONTROL CENTER, hospital emergency room, or doctor if you feel unwell.

P304/P340 – IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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/P311 – If exposed or concerned, call POISON CONTROL CENTER, hospital emergency room, or doctor.

P332/P313 – If skin irritation occurs, get medical advice/attention.

P337/P313 – If eye irritation persists, get medical advice/attention.

P361/364 – Immediately take off all contaminated clothing and launder before reuse.

Storage Precautionary Statements

P405 – Store locked-up.

P410/P412 – Protect from sunlight. Do not expose to temperatures exceeding 122°F (50°C).

Disposal Precautionary Statements

P501 – Dispose of contents/container in accordance with local, regional, national, and international regulations, as applicable.

Hazards Not Otherwise Classified

none known

Ingredients of unknown acute toxicity

none

Section 3 – Composition/Information on Ingredients

<u>Component</u>	<u>CAS RN</u>	<u>Weight</u>
1-Methyl-2-Pyrrolidone	872-50-4	25-40%
2-Butoxyethanol	111-76-2	20-30%
Methanol	67-56-1	20-30%
Polyetheramine	Mixture	6-10%
Carbon Dioxide	124-38-9	<5%
Alkylphenol Ethoxylate	127087-87-0	<5%

Section 4 – First Aid Measures

Description of First Aid Measures

Ingestion

Rinse mouth. Drink 1-2 glasses of milk or water. Call poison control center, hospital emergency room, or doctor if you feel unwell.

Eye Contact

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.

Skin Contact

Immediately take off all contaminated clothing. Rinse skin with soap and water or shower. Call POISON CONTROL CENTER, hospital emergency room, or doctor.

Inhalation

Remove person to fresh air and keep comfortable. If experiencing respiratory symptoms or if breathing is difficult, administer oxygen and call poison control center, hospital emergency room, or doctor.

Most Important Symptoms and Effects

Acute/Immediate

headache and lightheadedness

Delayed

drying, cracking, or defatting of the skin

Indications of Need for Immediate Medical Attention and Specific Treatment Required

Indications of Need for Immediate Medical Attention

In the event of shortness of breath, difficulty breathing, or spontaneous vomiting, severe headache, or loss of consciousness, seek immediate medical attention.

Specific Treatment and Notes to Physician

If spontaneous vomiting occurs, keep head below hips to avoid aspiration.

Section 5 – Firefighting Measures

Fire Extinguishing Media

Support for Combustion

Product supports combustion.

Suitable Extinguishing Media

water fog, dry chemical, alcohol-resistant foam, or carbon dioxide

Unsuitable Extinguishing Media

water jet/spray (may cause product to float to surface and reignite)

Special Hazards/Considerations

Combustion Products

Combustion in the presence of air may yield hydrocarbons, organic oxygenates, ammonia, amines, and oxides of carbon and nitrogen.

Special Protective Equipment and Precautions for Firefighters

Special Protective Equipment

Firefighters should employ SCBA and full protective gear, including shield, as product is comprised of low-boiling, flammable solvents and may vent, rupture, or explode violently at elevated temperatures.

Precautions and Procedures

Contains gas under pressure; may explode if heated. Vapors heavier than air. Remove product from area if safe to do so. Use water spray to cool nearby containers.

Section 6 – Accidental Release Measures

Personal and Environmental Precautions

Personal Precautions

Do not handle until all safety precautions have been read and understood. Keep away from heat, sparks, open flames, and hot surfaces. No smoking. Do not breathe mist, vapor, or spray. Wash thoroughly with soap and water after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves, protective clothing, and eye or face protection.

Environmental Precautions

Avoid release to the environment. Prevent contamination of ground water.

Materials and Methods for Containment

Small Spills

Use socks/absorbent mini-booms or other inert barrier if necessary to contain small spills.

Materials and Methods for Containment (cont'd.)**Large Spills**

Use large socks/absorbent booms or other inert barrier to form a dam/dike in order to contain large spills and prevent further loss of product.

Materials and Methods for Cleanup**Small Spills**

Remove source from area if safe to do so. Use granular sorbent, gel sorbent, vermiculite, cat litter, dirt/earth, pads/rolls, or pillows to absorb spilled material. Remediate affected area as necessary.

Large Spills

Keep upwind from spill. Remove source from area if safe to do so. Use explosion-proof transfer equipment to recover spilled material. Use granular sorbent, gel sorbent, vermiculite, cat litter, dirt/earth, pads/rolls, or pillows to absorb residual material. Remediate affected area as necessary.

Section 7 – Handling and Storage**Precautions for Safe Handling****Personal Precautions**

Do not handle until all safety precautions have been read and understood. Do not breathe mist, vapor, or spray. Use only outdoors or in a well-ventilated area. Wear protective gloves, protective clothing, and eye or face protection. Wash thoroughly with soap and water after handling. Do not eat, drink or smoke when using this product.

Environmental Precautions

Keep away from heat, sparks, open flames, and hot surfaces. No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use. Avoid release to the environment.

Conditions and Considerations for Safe Storage

Contains gas under pressure; may explode if heated. Protect from sunlight. Do not expose to temperatures exceeding 122°F (50°C). Store locked-up. Store according to NFPA Aerosol Level 2 recommendations.

Section 8 – Exposure Controls/Personal Protection

<u>Component</u>	<u>CAS RN</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
2-Butoxyethanol	111-76-2	50 ppm	20 ppm
Methanol	67-56-1	200 ppm	200 ppm
Carbon Dioxide	124-38-9	5000 ppm	5000 ppm

Exposure Controls**Appropriate Engineering Controls**

If practical, use outside with adequate ventilation to minimize exposure.

PPE Overview**Hand Protection**

Use of chemical-resistant gloves (EVAL, neoprene, nitrile/Buna-N, PVC, or Viton) is recommended.

Eye Protection

Use of safety glasses with wrap-around lens or goggles is recommended.

Respiratory Protection

If necessary, use respiratory protection sufficient to reduce exposure to permissible limits.

Additional Protection

For industrial settings, access to a chemical safety shower with eye wash station is strongly recommended.

Section 9 – Physical and Chemical Properties**Information on Basic Physical and Chemical Properties****Physical State**

liquid

Appearance

clear, colorless to very light yellow

Odor

mild, solvent

Odor Threshold

0.5 ppm

pH

not relevant

Information on Basic Physical and Chemical Properties (cont'd.)**Freezing Point**

< -39°F

Boiling Range

148-608°F

Flash Point and Method

55-70°F by closed-cup tester

Explosion Limits in Air

1.9 - 14.3% by volume (composite)

Evaporation Rate

0.5 (n-Butyl Acetate=1.0)

Vapor Pressure, as supplied

80-120 PSI (typical)

Vapor Density

>1.0

Specific Gravity

0.941 at 68°F

Density

7.84 lb/gal at 68°F

Water Solubility

practically insoluble

n-Octanol/Water Partition Coefficient (log P_{ow})

0.6 (composite)

Viscosity

2 cSt at 68°F

Volatility

85-90% by weight

Auto-ignition temperature

540°F (composite)

Section 10 – Stability and Reactivity**Chemical Stability under Normal Conditions of Use****Chemical Stability**

Stable under normal conditions of use.

Conditions Affording Instability

none known

Reactivity

not expected

Possibility of Hazardous Reactions

none known

Conditions to Avoid

Avoid direct sunlight and excessive temperatures. Do not puncture, incinerate, or crush. Keep away from heat, sparks, open flames, and hot surfaces. No smoking. If practical, avoid temperatures exceeding flash point.

Incompatible Materials

strong acids; oxidizers; reducing agents

Hazardous Decomposition Products

none known

Section 11 – Toxicological Information**Likely Routes of Exposure**

ingestion, skin contact, eye contact, inhalation

Symptoms Related to Physical, Chemical, and Toxicological Characteristics**Ingestion****Large Quantity**

gastrointestinal disturbances, including upset stomach, cramping, nausea, vomiting, and diarrhea

Small Quantity/Incidental Contact

gastrointestinal disturbances, including upset stomach and cramping

Symptoms Related to Physical, Chemical, and Toxicological Characteristics (cont'd.)

Skin Contact

moderate irritation

Eye Contact

severe eye irritation

Inhalation

headache, lightheadedness

Immediate, Delayed, and Chronic Effects

SHORT-TERM EXPOSURE

Potential Immediate Effects

Ingestion

drying, burning, or irritation of the mouth and throat, gastrointestinal disturbances, nausea and vomiting, blindness

Skin Contact

drying of the skin

Eye Contact

temporary corneal damage

Inhalation

shortness of breath or difficulty breathing, headache, dizziness, nausea and vomiting, drowsiness, fatigue, loss of consciousness, death

Potential Delayed Effects

Ingestion

coma, death

Skin Contact

defatting of the skin, drying and cracking of the skin, aggravation of pre-existing skin conditions

Eye Contact

temporary corneal damage

Inhalation

nausea and vomiting, loss of consciousness

LONG-TERM EXPOSURE

Potential Immediate Effects

none known

Potential Delayed Effects

none known

Potential Chronic Health Effects

Carcinogenicity

International Agency for Research on Cancer (IARC) Monographs

all components "Group 3 – Not Classifiable as to Human Carcinogenicity" or not listed

National Toxicology Program (NTP) Report on Carcinogens

not listed

Occupational Safety & Health Administration (OSHA)

not listed

Mutagenicity / Genetic Toxicity

not suspected of being a human mutagen / genetic toxicant

Teratogenicity

not suspected of being a human teratogen

Developmental Effects

possible developmental toxicant (Methanol and 1-Methyl-2-Pyrrolidone)

Fertility Effects

not suspected of being a reproductive/fertility toxicant

Effects on Lactation

not suspected of affecting lactation

SPECIFIC TARGET ORGAN TOXICITY (STOT)

Single Exposure

eyes, respiratory tract effects

Repeated Exposure

blood/blood system effects

Numerical Measures of Acute Toxicity

Oral (Rat)

LD₅₀: 460 mg/kg (acute toxicity estimate)

Numerical Measures of Acute Toxicity (cont'd.)

Dermal (Rabbit)

LD₅₀: 1010 mg/kg (derived)

Inhalation (Rat)

LC₅₀: 5.0 mg/L (derived)

Additional Toxicological Information

Skin Irritation/Corrosion (Rabbit)

skin irritant

Serious Eye Damage/Irritation (Rabbit)

severe eye irritant

Respiratory Sensitization

does not cause respiratory sensitization

Skin Sensitization

does not cause skin sensitization

Aspiration Hazard

not an aspiration hazard

Section 12 – Ecological Information

General Ecological Assessment/Overview

Harmful to animal life. Toxic to aquatic life. Very mobile in soils which may lead to contamination of groundwater.

Aquatic Toxicity

Vertebrates (Fish)

Acute Toxicity

LC₅₀: >100 mg/L (derived)

Chronic Toxicity

NOEC: not available

Invertebrates (Water Flea)

Acute Toxicity

LC₅₀: >100 mg/L (derived)

Chronic Toxicity

NOEC: not available

Aquatic Plants (Freshwater Algae)

Acute Toxicity

EC₅₀: >100 mg/L (derived)

Chronic Toxicity

NOEC: >100 mg/L (derived)

Terrestrial Toxicity

Invertebrate (Earthworm)

LC₅₀: not available

Persistence and Degradability

Persistence

not expected to be persistent

Degradability

rapidly degradable

Bioaccumulative Potential

Bioaccumulation Potential Assessment

does not bioaccumulate

Bioaccumulation Factor

<20

Mobility in Soils

Mobility in Soils Assessment

very mobile in soils—may contaminate groundwater

Soil Organic Carbon/Water Partition Coefficient (log K_{oc})

3.9 (composite)

Results of PBT and vPvB Assessment

not a persistent, bioaccumulative, toxic chemical (PBT); not very persistent and very bioaccumulative (vPvB)

Other Adverse Effects

none known

Section 13 – Disposal Considerations

General Assessment/Overview

Dispose of waste in accordance with all applicable regulations. Harmful to animal life—do not pour on ground. Contains aggressive solvents, which may dissolve PVC pipes and fittings—do not pour down drain.

RCRA Hazardous Waste Code(s) (40 CFR 261.20-33)

Based on this material as-supplied, used or unwanted product may be subject to RCRA regulations and classified as F003 – spent non-halogenated solvent mixture containing acetone, methanol, and/or xylene

Section 14 – Transportation Information

Transportation by Ground

US Department of Transportation

Shipping Description

UN1950, Aerosols, 2.1

Exemption Eligibility

When shipped by ground, this product may be eligible for a “Limited Quantity” exception per §49 CFR 173.306.

Outside the United States

Shipping Description

UN1950, Aerosols, 2.1

Exemption Eligibility

When shipped by ground, this product may be eligible for a “Limited Quantity” exception per §49 CFR 173.306.

Transportation by Air (ICAO/IATA)

Shipping Description

UN1950, Aerosols, Flammable, containing substances in Division 6.1, Packing Group III, 2.1 (6.1)

Exemption Eligibility

When shipped by air, this product may be eligible for a “Limited Quantity” exception.

Transportation by Water – IMO/IMDG

Shipping Description

UN1950, Aerosols, 2.1

Exemption Eligibility

When shipped by water, this product may be eligible for a “Limited Quantity” exception.

Section 15 – Regulatory Information

Safety, Health, and Environmental Regulations/Legislation

UNITED STATES – SELECT FEDERAL REGULATIONS

Environmental Protection Agency (EPA)

Toxic Substances Control Act (TSCA) (15 USC 2601, et seq.)

All chemicals known to be present in this product are either listed on the TSCA inventory or are not required to be.

SARA Title III (42 USC 9601, et seq.)

Section 302 – Extremely Hazardous Substances (40 CFR 355)

none

Section 304 – Emergency Release Notification (40 CFR 302.4)

Methanol

Section 311/312 – Hazard Categorization (40 CFR 370.40)

acute toxicity, chronic toxicity, fire hazard, sudden release of pressure

Section 313 – Toxic Chemicals (40 CFR 372.65)

Methanol, 1-Methyl-2-Pyrrolidone, and 2-Butoxyethanol (“certain glycol ethers”)

Clean Air Act (42 USC 7401, et seq.)

Section 112 – Hazardous Air Pollutants

Methanol

Occupational Safety & Health Administration (OSHA)

Hazard Communication Standard

This safety data sheet (SDS) is provided for compliance with applicable regulations of the Hazard Communication Standard of 2012 (HCS/HAZCOM 2012) found in §29 CFR 1910.1200. Federal law requires persons receiving this document to study it carefully, become aware of the hazards of this product, and notify all employees, visitors, agents, and contractors of the information contained herein.

Consumer Product Safety Commission**Federal Hazardous Substances Act**

This product is regulated under the Federal Hazardous Substances Act, is subject to the labeling requirements of 16 CFR 1500, and must include at minimum the following cautionary statements: DANGER ☠ POISON: Flammable. May be fatal or cause blindness if swallowed. Vapor harmful. Eye and skin irritant. Contents under pressure. Keep out of the reach of children.

UNITED STATES – SELECT REGIONAL CONSIDERATIONS**Ozone Transport Commission (OTC) – Model Rule VOC Limit and Category**

not applicable

Lake Michigan Air Directors Consortium (LADCO) – Model Rule VOC Limit and Category

not applicable

UNITED STATES – SELECT STATE REGULATIONS**California****Office of Environmental Health Hazard Assessment (OEHHA)****Proposition 65 – Safe Drinking Water and Toxic Enforcement Act of 1986**

This product is subject to the labeling requirements of Proposition 65 – Safe Drinking Water and Toxic Enforcement Act of 1986 and must bear the cautionary symbol and statement: ⚠ **WARNING!** Reproductive Harm - www.P65Warnings.CA.gov

Air Resources Board (ARB/CARB)**Regulation for Reducing Emissions from Consumer Products – VOC Limit and Category**

not applicable

Massachusetts**“Right-to-Know” Legislation – Substance List (105 CMR 670.000)**

N-Methyl-2-Pyrrolidone, 2-Butoxyethanol, Methanol, Carbon Dioxide

New Jersey**“Right-to-Know” Legislation – Hazardous Substance List (34:5A-1, et seq.)**

N-Methyl-2-Pyrrolidone, 2-Butoxyethanol, Methyl Alcohol, Carbon Dioxide

Pennsylvania**“Right-to-Know” Legislation – Hazardous Substance List (Chapter 323)**

N-Methyl-2-Pyrrolidone, 2-Butoxyethanol, Methyl Alcohol, Carbon Dioxide

INTERNATIONAL – SELECT REGULATIONS**Canada****Environment Canada – Domestic Substances List (DSL)**

All chemicals known to be present in this product are listed on the DSL.

China**Ministry of Environmental Protection – Inventory of Existing Chemical Substances Produced or Imported in China (IECSC)**

All chemicals known to be present in this product are listed on the IECSC.

INTERNATIONAL – SELECT REGULATIONS (cont'd.)**European Union****European Chemical Agency – European Inventory of Existing Chemical Substances (EINECS)**

All chemicals known to be present in this product are listed on the EINECS.

Chemical Safety Assessment

has not been conducted on product, as-supplied

Section 16 – Other Information**Hazardous Materials Information System (HMIS)**

Health	*	3	Hazard Index
Flammability	3	Least	- 0
Reactivity	0	Slight	- 1
Protective Equipment	B	Moderate	- 2
		High	- 3
		Extreme	- 4

Index of Abbreviations

ACGIH – American Council of Governmental and Industrial Hygienists

CAS RN – Chemical Abstracts Service Registry Number

EC₅₀ – Median Effective Concentration

IATA – International Air Transport Association

Index of Abbreviations (cont'd.)

ICAO – International Civil Aviation Organization
IMDG – International Maritime Dangerous Goods
IMO – International Maritime Organization
LC₅₀ – Median Lethal Concentration
LD₅₀ – Median Lethal Dose
N/A – Not Applicable
NE – Not Established
NOEC – No Observable Exposure Concentration
PEL – Permissible Exposure Limit (as required by OSHA)
TLV – Threshold Limit Value (as recommended by ACGIH)
VOC – Volatile Organic Compound

Relevant Dates and Applicability

Date of Issuance

January 30, 2019

Date of Previous Revision

N/A—initial SDS

Primary Revision Change(s)

N/A

Document Applicability

This safety data sheet applies to part number 2643 manufactured on or after November 1, 2018.

Document Author

Dan Nowlan

Legal Disclaimer

The information contained in this document is, to the best of Berryman Products, Inc.'s knowledge, complete and accurate but is not warranted. All materials may present unknown hazards and should be used with caution. It is the responsibility of the user to evaluate the information in a prudent manner and to use it in a manner consistent with its intended purpose. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.



Safety Data Sheet

Section 1 – Identification of the Mixture and of the Company

Product Identification

Primary Identifier(s) Used on the Label

Berryman *STEP 4 PROFESSIONAL FUEL SYSTEM CLEANER*

Product Synonym(s)

blend "TFSC-1"

Product Number(s)

2644

Relevant Identified Uses and Uses Advised Against

Recommended Uses

gasoline fuel additive

Uses Advised Against

not for use in diesel fuels

Manufacturer/Supplier Details

Berryman Products, Inc.

3800 E Randol Mill Rd

Arlington, TX 76011

(800) 433-1704 (USA/Canada)

(817) 640-2376 (international)

www.BerrymanProducts.com

Emergency 24-Hour Telephone Number(s) – InfoTrac, Inc.

(800) 535-5053 (USA/Canada)

(352) 323-3500 (international)

Section 2 – Hazards Identification

Classification of the Substance or Mixture (29 CFR 1910.1200)

Physical Hazards

Flammable Liquid – Category 2

Health Hazards

Acute Oral – Category 4

Acute Dermal – Category 4

Acute Inhalation – Category 4

Skin Irritant – Category 2

Eye Irritant – Category 2A

Carcinogen – Category 2

Developmental – Category 2

Specific Target Organ Toxicity - Single Exposure – Category 1

Specific Target Organ Toxicity - Repeated Exposure – Category 2 (blood/blood system, central nervous system)

Aspiration Hazard – Category 1

Environmental Hazard - Acute – Category 2

Environmental Hazard - Chronic – Category 3

Allocation of Label Elements

Chemical Identity

Berryman *STEP 4 PROFESSIONAL FUEL SYSTEM CLEANER*

Pictograms**Signal Word**

DANGER

Hazard Statements

H225 – Highly flammable liquid and vapor.

H302 – Harmful if swallowed.

H304 – May be fatal if swallowed and enters airways.

H312 – Harmful in contact with skin.

H315 – Causes skin irritation.

H319 – Causes serious eye irritation.

H321 – Specific treatment (see supplemental first aid instructions this label/document).

H332 – Harmful if inhaled.

H351 – Suspected of causing cancer.

H361d – Suspected of damaging the unborn child.

H370 – Causes damage to organs.

H373 – May cause damage to blood/blood system and central nervous system through prolonged or repeated exposure.

H401 – Toxic to aquatic life.

H412 – Harmful to aquatic life with long-lasting effects.

Prevention Precautionary Statements

P101 – Keep out of reach of children.

P102 – Read label before use.

P201 – Obtain special instructions before use.

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

P210 – Keep away from heat, sparks, open flames, and hot surfaces. No smoking.

P233 – Keep container tightly closed.

P240 – Ground/bond container and receiving equipment. Special precautions may be necessary for non-conductive containers.

P241 – Use explosion-proof electrical, ventilation, and lighting equipment.

P242 – Use only non-sparking tools, such as brass or bronze.

P243 – Take precautionary measures against static discharge.

P260 – Do not breathe fumes, gas, mist, vapor, or spray.

P264 – Wash thoroughly with soap and water after handling.

P270 – Do not eat, drink or smoke when using this product.

P271 – Use only outdoors or in a well-ventilated area.

P273 – Avoid release to the environment.

P280 – Wear protective gloves, protective clothing, and eye or face protection.

Response Precautionary Statements

P312 – Call POISON CONTROL CENTER, hospital emergency room, or doctor if you feel unwell.

P314 – Get medical advice/attention if you feel unwell.

P321 – Specific treatment available in this document in “Section 4 – First Aid Measures.”

P330 – Rinse mouth.

P331 – Do NOT induce vomiting.

P301/P310 – IF SWALLOWED: Immediately call POISON CONTROL CENTER, hospital emergency room, or doctor.

P303/P361/P353 – IF ON SKIN (OR HAIR): Immediately take off all contaminated clothing. Rinse skin with soap and water or shower.

P304/P340 – IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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/P311 – If exposed or concerned, call POISON CONTROL CENTER, hospital emergency room, or doctor.

P332/P313 – If skin irritation occurs, get medical advice/attention.

P337/P313 – If eye irritation persists, get medical advice/attention.

P361/364 – Immediately take off all contaminated clothing and launder before reuse.

P362/364 – Take off contaminated clothing and launder before reuse.

P370/P378 – In case of fire, use water fog, dry chemical, alcohol-resistant foam, or carbon dioxide to extinguish.

Storage Precautionary Statements

P405 – Store locked-up.

P403/P235 – Store in a well-ventilated place. Keep cool.

Disposal Precautionary Statements

P501 – Dispose of contents/container in accordance with local, regional, national, and international regulations, as applicable.

Hazards Not Otherwise Classified

none known

Ingredients of unknown acute toxicity

none

Section 3 – Composition/Information on Ingredients

<u>Component</u>	<u>CAS RN</u>	<u>Weight</u>
Toluene	108-88-3	45-55%
Acetone	67-64-1	5-15%
Methanol	67-56-1	5-15%
Kerosene	8008-20-6	5-10%
2-Butoxyethanol	111-76-2	1-5%
Methyl Ethyl Ketone	78-93-3	1-5%
2-Propanol	67-63-0	1-5%
Ethylbenzene	100-41-4	<0.3%

Section 4 – First Aid Measures

Description of First Aid Measures

Ingestion

Immediately call poison control center, hospital emergency room, or doctor. Do NOT induce vomiting. Rinse mouth. Drink 1-2 glasses of milk or water.

Eye Contact

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.

Skin Contact

Immediately take off all contaminated clothing. Rinse skin with soap and water or shower.

Inhalation

Remove person to fresh air and keep comfortable. If experiencing respiratory symptoms or if breathing is difficult, administer oxygen and call poison control center, hospital emergency room, or doctor.

Most Important Symptoms and Effects

Acute/Immediate

headache and lightheadedness; nausea and vomiting

Delayed

drying, cracking, or defatting of the skin

Indications of Need for Immediate Medical Attention and Specific Treatment Required

Indications of Need for Immediate Medical Attention

In the event of spontaneous vomiting, severe headache, or loss of consciousness, seek immediate medical attention.

Specific Treatment and Notes to Physician

If performing lavage, endotracheal and/or esophageal control is recommended. If spontaneous vomiting occurs, keep head below hips to avoid aspiration.

Section 5 – Firefighting Measures

Fire Extinguishing Media

Support for Combustion

Product supports combustion.

Suitable Extinguishing Media

water fog, dry chemical, alcohol-resistant foam, or carbon dioxide

Unsuitable Extinguishing Media

water jet/spray (may cause product to float to surface and reignite)

Special Hazards/Considerations

Combustion Products

Combustion in the presence of air may yield various hydrocarbons, organic oxygenates, amines, and oxides of carbon and nitrogen.

Special Protective Equipment and Precautions for Firefighters

Special Protective Equipment

Firefighters should employ SCBA and full protective gear, including shield, as product may vent, rupture, or explode violently at elevated temperatures.

Precautions and Procedures

Highly flammable liquid and vapor. Vapors heavier than air. Remove product from area if safe to do so. Use water spray to cool nearby containers.

Additional Information

National Fire Protection Association (NFPA)

flammable liquid classification IB

Section 6 – Accidental Release Measures

Personal and Environmental Precautions

Personal Precautions

Do not handle until all safety precautions have been read and understood. Keep away from heat, sparks, open flames, and hot surfaces. No smoking. Take precautionary measures against static discharge. Ground/bond container and receiving equipment. Special precautions may be necessary for non-conductive containers. Use explosion-proof electrical, ventilation, and lighting equipment. Use only non-sparking tools, such as brass or bronze. Do not breathe fumes, gas, mist, vapor, or spray. Wash thoroughly with soap and water after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves, protective clothing, and eye or face protection.

Environmental Precautions

Avoid release to the environment. Prevent contamination of ground water.

Materials and Methods for Containment

Small Spills

Use socks/absorbent mini-booms or other inert barrier if necessary to contain small spills.

Large Spills

Utilize large socks/absorbent booms or other inert barrier to form dam/dike in order to contain spill and prevent further loss.

Materials and Methods for Cleanup

Small Spills

Remove source from area if safe to do so. Use granular sorbent, gel sorbent, vermiculite, cat litter, dirt/earth, pads/rolls, or pillows to absorb spilled material. Remediate affected area as necessary.

Large Spills

Keep upwind from spill. Remove source from area if safe to do so. Use explosion-proof transfer equipment to recover spilled material. Use granular sorbent, gel sorbent, vermiculite, cat litter, dirt/earth, pads/rolls, or pillows to absorb residual material. Remediate affected area as necessary.

Section 7 – Handling and Storage

Precautions for Safe Handling

Personal Precautions

Do not handle until all safety precautions have been read and understood. Do not breathe fumes, gas, mist, vapor, or spray. Use only outdoors or in a well-ventilated area. Wear protective gloves, protective clothing, and eye or face protection. Wash thoroughly with soap and water after handling. Do not eat, drink or smoke when using this product.

Environmental Precautions

Keep away from heat, sparks, open flames, and hot surfaces. No smoking. Take precautionary measures against static discharge. Ground/bond container and receiving equipment. Special precautions may be necessary for non-conductive containers. Use explosion-proof electrical, ventilation, and lighting equipment. Use only non-sparking tools, such as brass or bronze. Avoid release to the environment.

Conditions and Considerations for Safe Storage

Highly flammable liquid and vapor. Store in a well-ventilated place. Keep cool. Keep away from heat, sparks, open flames, and hot surfaces. No smoking. Keep out of reach of children. Store locked-up and in accordance with NFPA flammable liquid classification IB recommendations.

Section 8 – Exposure Controls/Personal Protection

<u>Component</u>	<u>CAS RN</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Toluene	108-88-3	200 ppm	20 ppm
Acetone	67-64-1	1000 ppm	500 ppm
Methanol	67-56-1	200 ppm	200 ppm
Kerosene	8008-20-6	NE	200 mg/m ³
2-Butoxyethanol	111-76-2	50 ppm	20 ppm
Methyl Ethyl Ketone	78-93-3	200 ppm	200 ppm
2-Propanol	67-63-0	500 ppm	400 ppm
Ethylbenzene	100-41-4	100 ppm	100 ppm

Exposure Controls

Appropriate Engineering Controls

If practical, use outside with adequate ventilation to minimize exposure.

PPE Overview

Hand Protection

Use of chemical-resistant gloves (EVAL, neoprene, nitrile/Buna-N, PVC, or Viton) is recommended.

Eye Protection

Use of safety glasses with wrap-around lens or goggles is recommended.

Respiratory Protection

If necessary, use respiratory protection sufficient to reduce exposure to permissible limits.

Additional Protection

For industrial settings, access to a chemical safety shower with eye wash station is strongly recommended.

Section 9 – Physical and Chemical Properties**Information on Basic Physical and Chemical Properties****Physical State**

liquid

Appearance

clear, amber to brown

Odor

aromatic (toluene)

Odor Threshold

0.5 ppm

pH

not relevant

Freezing Point

<0°F

Boiling Range

133 - 580°F

Flash Point and Method

<20°F by closed-cup tester

Explosion Limits in Air

2.1 - 13.3% by volume

Evaporation Rate

1.9 (n-Butyl Acetate=1.0)

Vapor Pressure, as supplied

49 mm of Hg at 68°F

Vapor Density

>1.0

Specific Gravity

0.845 at 68°F

Density

7.04 lb/gal at 68°F

Water Solubility

insoluble

n-Octanol/Water Partition Coefficient (log P_{ow})

2.0 (composite)

Viscosity

0.7 cSt at 68°F

Volatility

90 - 95% by weight

Auto-ignition temperature

870°F (composite)

Section 10 – Stability and Reactivity**Chemical Stability under Normal Conditions of Use****Chemical Stability**

Stable under normal conditions of use.

Conditions Affording Instability

none known

Reactivity

not expected

Possibility of Hazardous Reactions

none known

Conditions to Avoid

Keep away from heat, sparks, open flames, and hot surfaces. No smoking. If practical, avoid temperatures exceeding flash point.

Incompatible Materials

strong acids; oxidizers; reducing agents

Hazardous Decomposition Products

none known

Section 11 – Toxicological Information

Likely Routes of Exposure

ingestion, skin contact, eye contact, inhalation

Symptoms Related to Physical, Chemical, and Toxicological Characteristics

Ingestion

Large Quantity

gastrointestinal disturbances, including upset stomach, cramping, nausea, vomiting, and diarrhea

Small Quantity/Incidental Contact

virtually nontoxic after single ingestion of small quantity

Skin Contact

moderate irritation

Eye Contact

blurred vision, moderate eye irritation

Inhalation

respiratory tract irritation; headache, lightheadedness; narcotic effects, including dizziness, drowsiness, and loss of coordination; nausea and vomiting

Immediate, Delayed, and Chronic Effects

SHORT-TERM EXPOSURE

Potential Immediate Effects

Ingestion

drying, burning, or irritation of the mouth and throat; gastrointestinal disturbances; nausea and vomiting; blindness

Skin Contact

drying of the skin

Eye Contact

blurred vision, temporary corneal damage

Inhalation

shortness of breath or difficulty breathing, headache, dizziness, nausea and vomiting, drowsiness, fatigue, loss of consciousness, and death

Potential Delayed Effects

Ingestion

aspiration pneumonitis, cyanosis, coma, death

Skin Contact

defatting of the skin, drying and cracking of the skin, aggravation of pre-existing skin conditions

Eye Contact

temporary corneal damage

Inhalation

fatigue

LONG-TERM EXPOSURE

Potential Immediate Effects

none known

Potential Delayed Effects

brain/central nervous system (CNS) effects

Potential Chronic Health Effects

Carcinogenicity

International Agency for Research on Cancer (IARC) Monographs

Group 2 – Possible Human Carcinogen (Ethylbenzene)

National Toxicology Program (NTP) Report on Carcinogens

not listed

Occupational Safety & Health Administration (OSHA)

not listed

Mutagenicity / Genetic Toxicity

not suspected of being a human mutagen / genetic toxicant

Teratogenicity

not suspected of being a human teratogen

Developmental Effects

possible developmental toxicant (Toluene, Methanol)

Fertility Effects

not suspected of being a reproductive/fertility toxicant

Effects on Lactation

not suspected of affecting lactation

SPECIFIC TARGET ORGAN TOXICITY (STOT)

Single Exposure

Includes central nervous system (narcotic effects) and respiratory tract (irritation)

Repeated Exposure

blood/blood system and brain/central nervous system (CNS) effects

Numerical Measures of Acute Toxicity

Oral (Rat)

LD₅₀: 580 mg/kg (derived)

Dermal (Rabbit)

LD₅₀: 1660 mg/kg (derived)

Inhalation (Rat)

LC₅₀: 12 mg/L (derived)

Additional Toxicological Information

Skin Irritation/Corrosion (Rabbit)

skin irritant

Serious Eye Damage/Irritation (Rabbit)

eye irritant

Respiratory Sensitization

does not cause respiratory sensitization

Skin Sensitization

does not cause skin sensitization

Aspiration Hazard

known aspiration hazard

Section 12 – Ecological Information

General Ecological Assessment/Overview

Harmful to animal life. Acutely toxic to aquatic life. Harmful to aquatic life with long-lasting effects. Very mobile in soils which may lead to contamination of groundwater.

Aquatic Toxicity

Vertebrates (Fish)

Acute Toxicity

LC₅₀: 42 mg/L (derived)

Chronic Toxicity

NOEC: 2.1 mg/L (derived)

Invertebrates (Water Flea)

Acute Toxicity

LC₅₀: 3.7 mg/L (derived)

Chronic Toxicity

NOEC: 0.9 mg/L (derived)

Aquatic Plants (Freshwater Algae)

Acute Toxicity

EC₅₀: 3.3 mg/L (derived)

Chronic Toxicity

NOEC: 250 mg/L (derived)

Terrestrial Toxicity

Invertebrate (Earthworm)

LC₅₀: 180 mg/L (derived)

Persistence and Degradability

Persistence

not expected to be persistent

Degradability

rapidly degradable

Bioaccumulative Potential

Bioaccumulation Potential Assessment

does not bioaccumulate

Bioaccumulation Factor

not available

Mobility in Soils**Mobility in Soils Assessment**

very mobile in soils—may contaminate groundwater

Soil Organic Carbon/Water Partition Coefficient (log K_{oc})

4.2 (composite)

Results of PBT and vPvB Assessment

not a persistent, bioaccumulative, toxic chemical (PBT); not very persistent or very bioaccumulative (vPvB)

Other Adverse Effects

none known

Section 13 – Disposal Considerations**General Assessment/Overview**

Dispose of waste in accordance with all applicable regulations. Harmful to animal life—do not pour on ground. Acutely toxic to aquatic life and harmful to aquatic life with long-lasting effects—do not pour into waterways. Highly flammable liquid and vapor and aggressive solvents, which may dissolve PVC pipes and fittings—do not pour down drain.

RCRA Hazardous Waste Code(s) (40 CFR 261.20-33)

Based on this material as-supplied, used or unwanted product may be subject to RCRA regulations and classified as F003 – spent non-halogenated solvent mixture containing acetone, methanol, and/or xylene

Section 14 – Transportation Information**Transportation by Ground – US Department of Transportation****Shipping Description**

UN1993, Flammable Liquids, n.o.s., (contains Toluene, Methanol, Acetone), 3, PG II

Exemption Eligibility

When shipped by ground, this product may be eligible for a “Limited Quantity” exception per §49 CFR 173.150.

Transportation by Air – ICAO/IATA**Shipping Description**

UN1993, Flammable Liquids, n.o.s., (contains Toluene, Methanol, Acetone), 3, PG II

Exemption Eligibility

When shipped by air, this product may be eligible for a “Limited Quantity” exception.

Transportation by Water – IMO/IMDG**Shipping Description**

UN1993, Flammable Liquids, n.o.s., (contains Toluene, Methanol, Acetone), 3, PG II

Exemption Eligibility

When shipped by water, this product may be eligible for a “Limited Quantity” exception.

Section 15 – Regulatory Information**Safety, Health, and Environmental Regulations/Legislation*****UNITED STATES – SELECT FEDERAL REGULATIONS*****Environmental Protection Agency (EPA)****Toxic Substances Control Act (TSCA) (15 USC 2601, et seq.)**

All chemicals known to be present in this product are either listed on the TSCA inventory or are not required to be.

SARA Title III (42 USC 9601, et seq.)**Section 302 – Extremely Hazardous Substances (40 CFR 355)**

none

Section 304 – Emergency Release Notification (40 CFR 302.4)

Toluene, Methanol, Acetone, Methyl Ethyl Ketone

Section 311/312 – Hazard Categorization (40 CFR 370.40)

acute toxicity, chronic toxicity, fire hazard

Section 313 – Toxic Chemicals (40 CFR 372.65)

Toluene, Methanol, and 2-Butoxyethanol (“certain glycol ethers”)

Clean Air Act (42 USC 7401, et seq.)**Section 112 – Hazardous Air Pollutants**

Toluene, Methanol, Methyl Ethyl Ketone

Regulation of Fuels and Fuel Additives

This product complies with the requirements of §40 CFR 80 and must be used in a manner consistent with the directions on the product label.

Occupational Safety & Health Administration (OSHA)**Hazard Communication Standard**

This safety data sheet (SDS) is provided for compliance with applicable regulations of the Hazard Communication Standard of 2012 (HCS/HAZCOM 2012) found in §29 CFR 1910.1200. Federal law requires persons receiving this document to study it carefully, become aware of the hazards of this product, and notify all employees, visitors, agents, and contractors of the information contained herein.

Consumer Product Safety Commission**Federal Hazardous Substances Act**

This product is regulated under the Federal Hazardous Substances Act, is subject to the labeling requirements of 16 CFR 1500, and must include at minimum the following cautionary statements: DANGER: Flammable. May be fatal or cause blindness if swallowed. Vapor harmful. Eye and skin irritant. Keep out of the reach of children.

UNITED STATES – SELECT REGIONAL CONSIDERATIONS**Ozone Transport Commission (OTC) – Model Rule VOC Limit and Category**

not regulated as a fuel additive

Lake Michigan Air Directors Consortium (LADCO) – Model Rule VOC Limit and Category

not regulated as a fuel additive

UNITED STATES – SELECT STATE REGULATIONS**California****Office of Environmental Health Hazard Assessment (OEHHA)****Proposition 65 – Safe Drinking Water and Toxic Enforcement Act of 1986 (Prop 65)**

This product is subject to the labeling requirements of Proposition 65 – Safe Drinking Water and Toxic Enforcement Act of 1986 and must bear the cautionary statement: WARNING! This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Air Resources Board (ARB/CARB)**Regulation for Reducing Emissions from Consumer Products – VOC Limit and Category**

not regulated as a fuel additive

Massachusetts**"Right-to-Know" Legislation – Substance List (105 CMR 670.000)**

Toluene, Methanol, Acetone, Kerosene, 2-Propanol, Methyl Ethyl Ketone (MEK), 2-Butoxyethanol, Ethylbenzene

New Jersey**"Right-to-Know" Legislation – Hazardous Substance List (34:5A-1, et seq.)**

Toluene, Methyl Alcohol, Acetone, Kerosene, Isopropyl Alcohol, Methyl Ethyl Ketone, 2-Butoxyethanol, Ethylbenzene

Pennsylvania**"Right-to-Know" Legislation – Hazardous Substance List (Chapter 323)**

Methylbenzene, Methanol, 2-Propanone, Kerosene (Petroleum), 2-Propanol, 2-Butanone, 2-Butoxyethanol, Ethylbenzene

INTERNATIONAL – SELECT REGULATIONS**Canada****Environment Canada – Domestic Substances List (DSL)**

All chemicals known to be present in this product are listed on the DSL.

China**Ministry of Environmental Protection – Inventory of Existing Chemical Substances Produced or Imported in China (IECSC)**

All chemicals known to be present in this product are listed on the IECSC.

European Union**European Chemical Agency – European Inventory of Existing Chemical Substances (EINECS)**

All chemicals known to be present in this product are listed on the EINECS.

Section 16 – Other Information**Hazardous Materials Information System (HMIS)**

Health	* 2	Hazard Index
Flammability	3	Least - 0
Reactivity	0	Slight - 1
Protective Equipment	B	Moderate - 2
		High - 3
		Extreme - 4

Index of Abbreviations

ACGIH – American Council of Governmental and Industrial Hygienists
CAS RN – Chemical Abstracts Service Registry Number
EC₅₀ – Median Effective Concentration
IATA – International Air Transport Association
ICAO – International Civil Aviation Organization
IMDG – International Maritime Dangerous Goods
IMO – International Maritime Organization
LC₅₀ – Median Lethal Concentration
LD₅₀ – Median Lethal Dose
N/A – Not Applicable
NE – Not Established
NOEC – No Observable Exposure Concentration
PEL – Permissible Exposure Limit (as required by OSHA)
TLV – Threshold Limit Value (as recommended by ACGIH)
VOC – Volatile Organic Compound

Relevant Dates and Applicability

Date of Issuance

January 30, 2019

Date of Previous Revision

N/A—new product

Primary Revision Change(s)

N/A

Document Applicability

This safety data sheet only applies to part number 2644 manufactured on or after November 1, 2018.

Document Author

Dan Nowlan

Legal Disclaimer

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