



Safety Data Sheet

Section 1 – Identification of the Mixture and of the Company

Product Identification

Primary Identifier(s) Used on the Label

Berryman *MASS AIR FLOW SENSOR CLEANER*

Product Synonym(s)

blend "MAF"

Product Number(s)

2211

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.

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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 *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: >5000 mg/kg (derived)

Dermal (Rabbit)

LD₅₀: 2230 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 (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**

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

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 11, 2018

Date of Previous Revision

N/A—initial SDS for blend “MAF”

Primary Revision Change(s)

N/A

Document Applicability

This safety data sheet applies only to part number 2211.

Document Author

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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.