Safety Data Sheet

Section 1 – Identification of the Mixture and of the Company

Product Identification

Primary Identifier(s) Used on the Label
Berryman *B-12 Chemtool Fuel System Cleaner*
Product Synonym(s)
blend "1AA-1"
Product Number(s)
0101, 0105, 0115, 0116, and 0155

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 3
Skin Irritant – Category 2
Eye Irritant – Category 2A
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

Allocation of Label Elements

Chemical Identity
Berryman *B-12 Chemtool 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).
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.
H401 – Toxic to aquatic life.

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.
P235 – Keep cool.
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

P311 – Call POISON CONTROL CENTER, hospital emergency room, or doctor.
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/P233 – Store in a well-ventilated place. Keep container tightly closed.

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

Component	CAS RN	Weight
Toluene	108-88-3	40-50%
Acetone	67-64-1	20-25%
Methanol	67-56-1	20-25%
Methyl Ethyl Ketone	78-93-3	1-5%
2-Butoxyethanol	111-76-2	1-5%
2-Propanol	67-63-0	1-5%

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 for breathing. If experiencing respiratory symptoms, 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 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 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 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 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

Use large socks/absorbent booms or other inert barrier to form 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 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 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 container tightly closed. Keep cool. 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

Component	CAS RN	OSHA PEL	ACGIH TLV
Toluene	108-88-3	200 ppm	20 ppm
Acetone	67-64-1	1000 ppm	500 ppm
Methanol	67-56-1	200 ppm	200 ppm
Methyl Ethyl Ketone	78-93-3	200 ppm	200 ppm
2-Butoxyethanol	111-76-2	50 ppm	20 ppm
2-Propanol	67-63-0	500 ppm	400 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
Odor
aromatic (toluene)
Odor Threshold
0.5 ppm
pH
not relevant
Freezing Point
< -107°F
Boiling Range
133 - 343°F
Flash Point and Method
< 20°F by closed-cup tester
Explosion Limits in Air
2.5 - 16.2% by volume (composite)
Evaporation Rate
2.7 (n-Butyl Acetate=1.0)
Vapor Pressure, as supplied
81 mm of Hg at 68°F
Vapor Density
>1.0
Specific Gravity
0.831 at 68°F
Density
6.92 lb/gal at 68°F
Water Solubility
practically insoluble
n-Octanol/Water Partition Coefficient (log P_{ow})
1.0 (composite)
Viscosity
0.5 cSt at 68°F
Volatility
100% by weight
Auto-ignition temperature
880°F (composite)
Decomposition temperature
unknown

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, and 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, death

Potential Delayed Effects

Ingestion

aspiration pneumonitis, cyanosis, coma, and 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

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 (Toluene and 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
non-specific effects
Repeated Exposure
brain/central nervous system (CNS) effects

Numerical Measures of Acute Toxicity

Oral (Rat)
LD_{50}: 380 mg/kg (derived)
Dermal (Rabbit)
LD_{50}: 1100 mg/kg (derived)
Inhalation (Rat)
LC_{50}: 9.2 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. Toxic to aquatic life. Very mobile in soils which may lead to contamination of groundwater.

Aquatic Toxicity

Vertebrates (Fish)
Acute Toxicity
LC_{50}: 73 mg/L (derived)
Chronic Toxicity
NOEC: 2.9 mg/L (derived)
Invertebrates (Water Flea)
Acute Toxicity
LC_{50}: 7.2 mg/L (derived)
Chronic Toxicity
NOEC: 1.2 mg/L (derived)
Aquatic Plants (Freshwater Algae)
Acute Toxicity
EC_{50}: 4.7 mg/L (derived)
Chronic Toxicity
NOEC: not available

Terrestrial Toxicity

Invertebrate (Earthworm)
LC_{50}: not available

Persistence and Degradability

Persistence
not expected to be persistent

Degradability
rapidly degradable

Bioaccumulative Potential

Bioaccumulation Potential Assessment
does not bioaccumulate
Bioaccumulation Factor
90 (Toluene)

Mobility in Soils

Mobility in Soils Assessment
very mobile in soils—may contaminate groundwater
Soil Organic Carbon/Water Partition Coefficient (log K_{OC})
1.9 (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. Toxic to aquatic life—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, Acetone, Methanol, and 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)
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 ☠ POISON: Extremely 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
N/A—not regulated as a fuel additive
Lake Michigan Air Directors Consortium (LADCO) – Model Rule VOC Limit and Category
N/A—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 a chemical known to the State of California to cause birth defects or other reproductive harm.
Air Resources Board (ARB/CARB)
Regulation for Reducing Emissions from Consumer Products – VOC Limit and Category
N/A—not regulated as a fuel additive
Massachusetts
"Right-to-Know" Legislation – Substance List (105 CMR 670.000)
Toluene, Acetone, Methanol, Methyl Ethyl Ketone (MEK), 2-Butoxyethanol, 2-Propanol
New Jersey
"Right-to-Know" Legislation – Hazardous Substance List (34:5A-1, et seq.)
Toluene, Acetone, Methyl Alcohol, Isopropyl Alcohol, Methyl Ethyl Ketone, 2-Butoxyethanol
Pennsylvania
"Right-to-Know" Legislation – Hazardous Substance List (Chapter 323)
Methylbenzene, 2-Propanone, Methyl Alcohol, 2-Butanone, 2-Butoxyethanol, 2-Propanol

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	* 3
Flammability	3
Reactivity	0
Protective Equipment	B

Hazard Index	
Least	- 0
Slight	- 1
Moderate	- 2
High	- 3
Extreme	- 4

Index of Abbreviations

ACGIH – American Council of Governmental and Industrial Hygienists
CAS RN – Chemical Abstracts Service Registry Number
EC_{50} – Median Effective Concentration
IATA – International Air Transport Association
ICAO – International Civil Aviation Organization
IMDG – International Maritime Dangerous Goods
IMO – International Maritime Organization
LC_{50} – Median Lethal Concentration
LD_{50} – 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
June 8, 2015
Date of Previous Revision
May 28, 2015
Primary Revision Change(s)
modification to “Section 12 – Ecological Information”
Document Applicability
This safety data sheet applies to part numbers 0101, 0105, 0115, 0116, and 0155 manufactured on or after January 1, 2015.

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.