

1. Product and Supplier Information



Line of products name: **Rotor Rage** Code: Rotor Rage 2
 Product code: XX% Methanol -YY% Nitromethane -ZZ% Lube oil
 Product Name Product Code
 Rotor Rage Masters (15%) 64-15-21
 Rotor Rage Masters (22.5%) 56-22.5-21.5
 Rotor Rage Masters (30%) 49-30-21

Product contains: Methanol, nitromethane and synthetics and castor oil lubricants
 Chemical Family or Formula: Methyl Alcohol C H3OH FW= 32.04; Nitromethane H3CNO2 FW 61.04
 Purpose: Fuel for model cars, boats, airplanes, and the like. This product is recommended for no other use.

Supplier: **Byron Originals, Inc.** Phone: 712-364-3165
PO Box 279, 119 E. Hwy. 175 Fax: 712-364-2028
Ida Grove, IA 51445 email: info@byronoriginalsinc.com
 Web page www.byronfuels.com

Product Information: 712-364-3165
 Transportation Emergency: 800-424-9300 for spills only (Chemtrec)
 Outside USA and Canada: +1 703-527-3887 (collect calls accepted)
 Poison Control Center: 800-222-1222

2. Hazards Identification

Emergency overview:

OSHA Hazards Flammable liquid, Target organ effect, Toxic by inhalation, Toxic by ingestion, Toxic by skin absorption, Carcinogen

Target organs:
 Eyes, Kidney, Liver, Central nervous system.

GHS Classification:

Flammable liquid Category 2
 Acute toxicity, Oral Category 3
 Acute toxicity, Inhalation Category 3
 Acute toxicity, Dermal Category 3
 Specific target organ toxicity- single exposu Category 1
 Acute aquatic toxicity Category 3

GHS label elements, including precautionary statements:

Pictogram



Signal word: **Danger**

Hazard statements:

H225 Highly flammable liquid and vapor
 H331 Toxic if inhaled
 H311 Toxic in contact with skin
 H301 Toxic if swallowed
 H402 Harmful to aquatic life

Precautionary statements:

P102 Keep out of reach of children
 P210 Keep away from heat/sparks/open flames, hot surfaces. No smoking.
 P233 Keep container tightly closed
 P260 Do not breathe dust/fume/gas/mist/vapors/spray
 P280 Wear protective gloves/protective clothing/eye protection/face protection
 P301+310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician

2. Hazards Identification (continued)

Hazard Category Classifications and Ratings

Hazard Categories: Health Fire Pressure Reactivity Reference 49 CFR 171.8,
 Immediate Yes Yes No Yes OSHA 29 CFR 1910.1200 and
 Delayed Yes No No No SARA 302/311/312/313.
 HMIS Hazard Ratings: Health 2 Fire 3 Instability 0 Other B (Goggles, gloves)
 NFPA 704 Hazard Ratings: Health 2 Flammability 3 Reactivity 0 Special NA
 Hazard Ratings: Least: 0 Slight: 1 Moderate: 2 High: 3 Extreme: 4

Potential Health effects:

Inhalation Harmful or toxic if inhaled. Causes respiratory tract irritation.
 Skin Harmful or toxic in contact with skin. Causes skin irritation.
 Eyes Causes eye irritation.
 Ingestion Harmful or toxic if swallowed.

3. Composition and Information on Ingredients

CAS #	SARA		Material or Component	Range	Exposure limits ACGIH	
	313	dm			%	TWA*
67-56-1	Yes	1	Methanol A4, BEI EINECS 200-659-6	49% - 64%	200 ppm	250 ppm
75-52-5	No	NA	Nitromethane A3 EINECS 200-876-6	15 % - 30%	20 ppm	NE
NA	No	NA	Synthetic and Castor Oil Lubricants	21% - 21.5%	NE	NE

A3= Confirmed Animal carcinogen with Unknown Relevance to Humans
 A4= Not Classifiable as a Human Carcinogen
 BEI= Biological Exposure Limit exists for this material NA= Not applicable NE= Not Established
 No component is listed in "Threshold and Biological Exposure Indices for 2014" from ACGIH except as noted.
 Components listed in Title III Sec. 313 (EPCRA) are indicated by "Yes" above.
 *TWA= Time Weighted Average; STEL= Short Term Expos Reportable Quantity (40 CFR 302.4):

4. First Aid

General advice: Consult a physician. Show this safety data sheet to the attending doctor.
 Move out of the dangerous area to safety.
Inhalation: Remove individual to fresh air. If not breathing, give artificial respiration or oxygen as appropriate.
 Seek medical attention if breathing becomes difficult. Vapors may irritate breathing passages.
Skin Contact: Flush skin with water for 15 minutes and remove contaminated clothing. Wash shoes and clothing
 before reuse. Extended or repeated contact can defat and irritate skin.
Eyes: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids apart.
Ingestion: Seek immediate medical attention. Induce vomiting only as directed by physician. Drink water to dilute.
 Never give anything by mouth to an unconscious person.
Note to physician:
 When plasma methanol concentrations are higher than 20 mg/deciliter, when ingested doses are greater than
 30 milliliters, and when there is evidence of acidosis or visual abnormalities, a 10% solution of ethanol in
 5% aqueous dextrose, administered intravenously, is a safe, effective antidote. (WJ of M, Mar 1985, p 337)

5. Fire Fighting Measures

Flammability Summary (OSHA No data on combinations. Component data given below.

Extremely flammable.

Flammable Properties:	Product	Methanol	Nitromethane
Flash Point:	<73.4°F (23°C) TCC	52°F (11°C)	97°F (36°C) TCC
Autoignition Temperature:	No data	464°C	418°C
Upper Flammable/Explosive Limit, % in air:	No data	36%	62%
Lower Flammable/Explosive Limit, % in air:	No data	6%	7.3%

Conditions of flammability:

Flammable in the presence of a source of ignition and the liquid temperature is above the flash point.

Keep away from heat/ sparks/ open flame/ hot surface. No smoking in the vicinity.

Extremely dangerous! Vapor can travel distances to ignition sources and flash back.

Extinguishing Media:

Water spray, foam, dry chemical or carbon dioxide.

Do not allow contaminated water to enter sewers or waterways.

Fire Fighting Instructions:

In case of fire, use normal fire fighting equipment including a NIOSH approved self-contained breathing breathing apparatus (SCBA). Use water to cool containers.

Hazardous Combustion Products:

Oxides of carbon and nitrogen, plus product vapors.

6. Accidental Release Measures

Personal Protection for Emergency Situations:

Evacuate the area of all unnecessary personnel. Eliminate any ignition sources until the area is determined to be free from explosion and fire hazards. Contain the release and eliminate its source if this can be done safely.

Spill Mitigation Procedures

Air Release: Hazardous concentrations in air may be found in local spill area and immediately downwind.

Vapors may be suppressed by the use of water fog. Contain all liquid for treatment and/or disposal as a hazardous waste. Do not flush to sewer! US regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of stipulated quantities. US Coast Guard National Response Center is 800-424-8802.

Water Release: This material is soluble in water. Contain all liquid for treatment and/or disposal as a (potential) hazardous waste. Notify all downstream users of possible contamination.

Land Release: Create a dike or trench to contain materials. Absorb spill with inert material (e.g., dry sand, clay, earth or commercial absorbent), then place in a chemical waste container. Decontaminate all clothing and the spill area using a detergent and flush with large amounts of water. Contain all contaminated water for disposal or treatment. Vapors are heavier than air and may accumulate at ignitable concentrations in low areas.

Additional Spill Information: Stop source of spill as soon as possible and notify appropriate personnel. Utilize emergency response personal protection equipment prior to the start of any response. Evacuate all non-essential personnel Dispose of spill residues per guidelines under Section 13, Disposal Considerations.

7. Handling and Storage

Handling: Use with adequate ventilation. Vent containers before opening wide.

Do not take internally. Avoid contact with skin, eyes and clothing. Upon contact with skin or eyes, wash with water. Avoid breathing vapor, mist or gas. Electrically ground all equipment when handling this product. Retained residue may make empty containers hazardous. USE CAUTION!

Storage

Keep container closed when not in use. Store in a cool dry area away from ignition sources and oxidizers.

Outside or detached storage is preferred. Do not store in copper or copper alloy storage vessels.

DO NOT STORE WITH OTHER FLAMMABLES. Store in stainless steel or aluminum if wet.

Shelf Life Limitations:

See label or certificate of analysis for shelf life if applicable.

Incompatible Materials for Storage:

Refer to Section 10, "Incompatible Materials."

8. Exposure Controls and Personal Protection

CAS #	Material or Component	Parameter	Value	Source
67-56-1	Methanol	TLV	200 ppm	ACGIH and OSHA 1910.100 Table Z-1, NIOSH
		STEL	250 ppm	ACGIH and OSHA 1910.100 Table Z-1, NIOSH
		Potential for dermal absorption. BEI.		
75-52-5	Nitromethane	TLV	20 ppm	ACGIH
		TWA	100 ppm	OSHA 1910.100 Table Z-1
		Thyroid effects, URT irritation, lung damage, A3		

Not applicable Non-petroleum lubricants No exposure limits established.

ACGIH = American Conference of Governmental Industrial Hygienists

NIOSH = National Institute for Occupational Safety and Health

TLV = Threshold Limit Value; STEL = Short Term Exposure Limit TWA= Time Weighted Average

BEI= Biological Exposure Limit exists for this material OSHA = Occupational Safety and Health Administration

NE= Not Established A3= Confirmed Animal carcinogen with Unknown Relevance to Humans

Ventilation:

Local exhaust ventilation or other engineering controls are normally preferred when handling or using this product. Otherwise, use general exhaust ventilation if that is sufficient for general worker safety and comfort. Explosion proof motors and fans are required. A NIOSH/MSHA approved air supplied respirator is advised in the absence of adequate environmental control.

Protective Equipment for Routine Use of Product

Respiratory Protection:

See previous paragraph. Material should be handled or transferred in an approved fume hood or with adequate ventilation.

Respirator Type(s):

Air purifying respirators should not be used in oxygen deficient or IDLH atmospheres or if exposure concentrations exceed ten (10) times the published limit.

Skin: Wear impervious gloves (butyl rubber, Viton) to avoid skin contact. Follow good industrial hygiene practices.

Eyes: Use chemical safety glasses with side shields, safety goggles or a full face shield if splashing is possible.

Protective Clothing Type: Impervious

Other: A safety shower and eye bath should be readily available.

9. Physical Data

Physical State:	Thin liquid		
Color:	Red		
Odor:	Characteristic odor: Irritating, alcohol, fruity, disagreeable		
Molecular Weight:	Not applicable to a blend. See Sec. 3 for component data.		
pH (@ 25 Deg. C):	Not applicable		
Melting/ Freezing Point:	Below 0°F (-18°C)	Methanol -97.8°C ; Nitromethane -29°C	
Initial Boiling Point: / Boiling range:	149°F (65°C)	Methanol 65°C; Nitromethane 101°C	
Flash point:	No data on product	Methanol 52°F (11°C) Nitromethane 97°F (36°C)	
Evaporation rate:	No data on product		
Flammability solid/ gas:	Not applicable		
Upper flammability limit:	36% V (Methanol)	62% V Nitromethane	
Lower flammability limit:	6% V (Methanol)	7.3% V Nitromethane	
Vapor Pressure (mm Hg @ 20 Deg. C	No data	Methanol 97.7 mm Hg; Nitromethane 27.8 mm Hg	
Vapor Density (Air = 1):	No data		
Relative density/ Specific Gravity:	0.80-0.90		
Solubility in Water:	79%		
Partition coefficient: n-octanol/ water:	No data		
Auto ignition temperature:	No data		
Decomposition temperature:	No data		
Viscosity:	No data		
Volatiles % by vol.:	79		

10. Stability and Reactivity

Stability and Reactivity Summary:

Stable under normal conditions.

Methanol: May react violently with acids, acid chlorides, acid anhydrides, oxidizing agents and alkali metals.

Nitromethane: Pure material is shock sensitive and thermally unstable, but methanol blends are NOT.

Forms an explosive sodium salt which bursts into flame upon contact with water.

Reactive Properties:

Sensitivity to mechanical shock: No

Hazardous Polymerization: Will not occur

Conditions to Avoid: High temperatures, exposure to heat, sparks, flame

Chemical Incompatibility: Sulfuric acid, oxidizer. See above.

Incompatible materials: Corrosive to copper, zinc and their alloys, as well as other metals.

Hazardous Decomposition Products: CO, CO2, Nitrogen oxides.

Decomposition Temperature: No data

Product May Be Unstable At Temperatures Above No data

11. Toxicological Information

Component Animal Toxicology	Methanol	Nitromethane	Lubricant
Oral LD50 value:	1.187 mg/kg (rat)	940 mg/kg (rat)	>2,000 mg/kg
Dermal LD50 value:	17.1 g/kg rabbit	No data	No data
Inhalation LC50 value:	128.2 mg/l rat, 4 hrs 87.6 mg/l rat 6 hrs	No data	> 30,000 mg/kg

Skin Irritation: This material is expected to be moderately irritating.

Eye Irritation: This material is expected to be severely irritating.

Reproductive and Developmental Toxicity:

Methanol caused birth defects in rats exposed to high levels of vapors : 20,000 ppm.

Nitromethane caused adverse reproductive effects in experimental animals.

Mutagenicity: Methanol: In vitro: Limited positive evidence. In vivo: No data. Nitromethane: No data.

Specific target organ toxicity - single exposure (GHS): Causes damage to organs.

Specific target organ toxicity - repeated exposure (GHS): not classified as specific target organ repeated exposure toxicant.

Carcinogenicity: Methanol: No evidence in animals from ingestion or skin absorption.

Nitromethane: ACGIH A3; CA Prop 65: Listed; NTP: Suspected carcinogen; IARC: 2B Carcinogen.

Carcinogenicity: rat-Inhalation. Tumorigenic by RTECS criteria. Skin and appendages: Other :Tumors.

Specific target organ toxicity - single exposure (GHS): No data

Specific target organ toxicity - repeated exposure (GHS): No data

12. Ecological Information

Methanol

Toxicity: To fish: Mortality lc50 - Lepomis macrochirus (Blue gill) - 15,400 mg/l - 96 hr
NOEC - Oryzias latipes - 7,900 mg/l -200 hr

To daphnia and other aquatic invertebrate: EC-50: Daphnia magna (Water flea) ->10,000 mg/l -48 hr

To algae: Growth inhibition EC50 - Scenedesmus capricornutum (fresh water algae)- 22,000 mg/l -96 hr

Biodegradability: Aerobic: 72% -rapidly biodegradable

Bioaccumulation potential: Bioaccumulation: Cyprinus carpio (Carp)- 72 d at 20°C
Bioconcentration factor (BCF): 1.0

Environmental Fate:

Methyl alcohol is expected to biodegrade in soil and water very rapidly.

This product will show high soil mobility and will be degraded from the ambient atmosphere by the reaction with photochemically produced hydroxyl radicals with an estimated half-life of 17.8 days.

Bioconcentration factor for fish (golden ide) < 10.

Based on a log Kow of -0.77, the BCF value for methanol can be estimated to be 0.2.

12. Ecological Information (continued)

Nitromethane

Ecotoxicity:

This material is expected to be slightly toxic to aquatic life.

Environmental Fate:

When released into the soil, this material is expected to readily biodegrade.

When released into the soil, this material is expected to leach into groundwater

When released into the soil, this material is expected to quickly evaporate.

When released into the water, this material is expected to have a half-life between 1 and 10 days.

When released into water, this material is expected to readily biodegrade.

When released into the air, this material is expected to exist in the aerosol phase with a short half-life.

When released into the air, this material is expected to be readily degraded by reaction with

photochemically produced hydroxyl radicals.

When released into air, this material is expected to have a half-life between 10 and 30 days.

When released into the air, this material is expected to be readily removed from the atmosphere by wet deposition.

Lubricant

Ecotoxicity:

Acute and Prolonged Toxicity to Fish -

Rainbow Trout / LC50 (96 h): > 100 mg/l

Toxicity to Microorganisms: N/A

Inhibition of degradation activity in activated sludge is not to be anticipated during introduction of low concentrations

Do not release untreated into natural waters.

Not a Marine Pollutant.

Environmental Fate:

Biodegradation:

Test Method: OECD Guideline 301F

Method of Analysis: BOD of the ThOD

Degree of Elimination: > 60% (28 d)

Evaluation: Readily Biodegradable

Chemical Oxygen Demand (COE 2,050 mg/g

13. Disposal Considerations

Waste Disposal Summary:

Product as supplied qualifies as "Unlisted Hazardous Waste D001" with the characteristic of ignitability.

Disposal Methods:

Disposed of in accordance with local, state and federal regulations for hazardous waste.

Components subject to land ban restrictions:

No components subject to land ban restrictions.

14. Transportation Information

Proper Shipping Name, Hazard Class, UN/NA Number Packing Group, Emergency Response Guide Number

US DOT: UN1993, Flammable liquids, n.o.s., (Contains methanol, nitromethane), Class 3, PG II
ERG 128

Labels required per 49 CFR 172.101: Flammable

Size for "Limited quantity" per 49 CFR 173.150-.155: 1 quart max. in 66# max. container

Reportable Quantity ("RQ") per 49 CFR 172.101: Not possible in one non bulk container.

Passenger air/ Rail: 5 liter

Cargo air only: 60 liter

Vessel stowage: B

IMO/IMDG Classification: UN1992, Flammable liquids, N.O.S., TOXIC, (Contains methanol, nitromethane)
Class 3(6.1), PG II (12°C cc)

15. Regulatory Information

OSHA Hazards: Flammable liquid and vapor, toxic.
 SARA Title III, Section 302 Components (40 CFR 365, APP. A)
 Methanol 5000 #

SARA 311/312 Hazards

Acute Yes
 Chronic Yes

SARA Title III, Section 313 Components (40 CFR 370.2)
 Methanol

CERCLA (Comprehensive Environmental Response Compensation and Liability Act, 40 CFR 302.4)
 Reportable quantities: Methanol 5000#

TSCA (Toxic Substances Control Act: 40 CFR 710:
 All ingredients listed.

RCRA (Resource Conservation & Recovery Act)
 Product has the characteristic of flammability and qualifies as "Unlisted Hazardous Waste D001" RQ 100#.

California Prop. 65 Components

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

State Right-to-Know Regulations Status of Ingredients
 Methanol listed in: CT, FL, IL, MA, NJ, NY, PA, RI
 Nitromethane listed in: CA, MA, MN, NJ, PA

Canada: WHMIS (Workplace Hazardous Materials Information System):
 Category B2, Flammable Liquid

16. Additional Information

This Safety Data Sheet (SDS) has been prepared in compliance with the federal OSHA Hazard Communication Standard 29 CFR 1910.1200. The information in this SDS should be provided to all who will use, handle, store, transport or otherwise be exposed to this product. This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of the manufacturer. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of the suitability and completeness of information from all sources to assure proper use and disposal of these materials and the health of employees and customers.

If this SDS is more than three (3) years old you should contact the supplier to make sure that the information is still current.

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 Date revised: May 27, 2015 Sec. 1, 3, 5.