

### SECTION 1: Identification

#### 1.1. Identification

Product form	: Mixture
Product name	: Residual Fuel Reference Material
CAS-No.	: 64742-95-6
Product code	: AR100, AR150, AR1622, AR2809, AR2811, AR2812, AR2813, AR2814, AR2815, AR2816, AR2817, AR2818, AR2819, AR2819, AR2859, AR2861, AR2862, AR2863, AR2864, AR2891, AR2892, AR2893, AR2894, AR2895, AR2896, AR2897, AR2898, AR2899, AR3181, AR3182
Formula	: Fórmula química no especificada
Other means of identification	: .

#### 1.2. Recommended use and restrictions on use

Use of the substance/mixture	: Laboratory chemicals
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#### 1.3. Supplier

Alpha Resources LLC  
 3090 Johnson Rd.  
 Stevensville, Michigan 49127  
 USA  
 T (269)465-5559  
[info@alpharesources.com](mailto:info@alpharesources.com) - [www.alpharesources.com](http://www.alpharesources.com)

#### 1.4. Emergency telephone number

Emergency number	: CHEMTREC Emergency Phone Number: (800) 424-9300
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### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

Flammable liquids Category 2	H225	Highly flammable liquid and vapor
Carcinogenicity Category 2	H351	Suspected of causing cancer
Full text of H statements : see section 16		

#### 2.2. GHS Label elements, including precautionary statements

##### GHS US labeling

Hazard pictograms (GHS US)



Signal word (GHS US)

: Danger

Hazard statements (GHS US)

: H225 - Highly flammable liquid and vapor  
 H351 - Suspected of causing cancer

Precautionary statements (GHS US)

: P201 - Obtain special instructions before use.  
 P202 - Do not handle until all safety precautions have been read and understood.  
 P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
 P233 - Keep container tightly closed.  
 P240 - Ground/Bond container and receiving equipment.  
 P241 - Use explosion-proof electrical/ventilating/lighting equipment.  
 P242 - Use only non-sparking tools.  
 P243 - Take precautionary measures against static discharge.  
 P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
 P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
 P308+P313 - If exposed or concerned: Get medical advice/attention.  
 P370+P378 - In case of fire: Use media other than water to extinguish.  
 P403+P235 - Store in a well-ventilated place. Keep cool.

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P405 - Store locked up.

P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

### 2.3. Other hazards which do not result in classification

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

No additional information available

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%	GHS US classification
CUMENE	CAS-No.: 98-82-8	2	Flam. Liq. 3, H226 Carc. 2, H351

Full text of hazard classes and H-statements : see section 16

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

First-aid measures general	: IF exposed or concerned: Get medical advice/attention.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing.
First-aid measures after eye contact	: Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Call a poison center/doctor/physician if you feel unwell.

### 4.2. Most important symptoms and effects (acute and delayed)

No additional information available

### 4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

### 5.2. Specific hazards arising from the chemical

Fire hazard	: Highly flammable liquid and vapor.
Hazardous decomposition products in case of fire	: Toxic fumes may be released.

### 5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. No open flames, no sparks, and no smoking.

#### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

### 6.2. Environmental precautions

Avoid release to the environment.

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### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up	: Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.
Other information	: Dispose of materials or solid residues at an authorized site.

### 6.4. Reference to other sections

For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling	: Ensure good ventilation of the work station. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapors may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
Hygiene measures	: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures	: Ground/bond container and receiving equipment.
Storage conditions	: Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Residual Fuel Reference Material (64742-95-6)	
USA - ACGIH - Occupational Exposure Limits	
Local name	1,2,4-Trimethyl benzene
ACGIH OEL TWA [ppm]	10 ppm
Remark (ACGIH)	TLV® Basis: CNS impair; hematologic eff. Notations: A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2023
CUMENE (98-82-8)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Cumene
ACGIH OEL TWA [ppm]	5 ppm
Remark (ACGIH)	TLV® Basis: URT adenoma; neurological eff. Notations: A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans)
Regulatory reference	ACGIH 2024
USA - OSHA - Occupational Exposure Limits	
Local name	Cumene
OSHA PEL TWA [1]	245 mg/m³
OSHA PEL TWA [2]	50 ppm
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
8.2. Appropriate engineering controls	

Appropriate engineering controls	: Ensure good ventilation of the work station.
Environmental exposure controls	: Avoid release to the environment.

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### 8.3. Individual protection measures/Personal protective equipment

#### Hand protection:

Protective gloves

#### Eye protection:

Safety glasses

#### Skin and body protection:

Wear suitable protective clothing

#### Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

#### Personal protective equipment symbol(s):



## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid. Clear, colorless liquid.
Color	: Colorless
Odor	: gasoline-like
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: -20 – 260 °C Atm. press.: 101,325 kPa
Flash point	: < -40 °C Atm. press.: 101,325 other:
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapor pressure	: ≤ 240 kPa Temp.: 37,8 °C
Relative vapor density at 20°C	: 4.2
Relative density	: 0.62 – 0.88 Type: 'relative density' Temp.: 15 °C
Solubility	: Insoluble.
Partition coefficient n-octanol/water (Log Pow)	: 2.1 – 6 Source: IUCLID
Auto-ignition temperature	: 465 °C
Decomposition temperature	: No data available
Viscosity, kinematic	: < 1 mm <sup>2</sup> /s Temp.: 'other:' Parameter: 'kinematic viscosity (in mm <sup>2</sup> /s)'
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Highly flammable liquid and vapor.

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### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified  
Acute toxicity (dermal) : Not classified  
Acute toxicity (inhalation) : Not classified

#### Residual Fuel Reference Material (64742-95-6)

LD50 oral rat	> 5000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity)
LD50 dermal rat	> 2000 mg/kg Source: ECHA
ATE US (vapors)	5.16 mg/l/4h

#### CUMENE (98-82-8)

LD50 oral rat	2910 mg/kg Source: HSDB
LD50 dermal rabbit	> 3160 mg/kg body weight Animal: rabbit
ATE US (oral)	2910 mg/kg body weight

Skin corrosion/irritation : Not classified  
Serious eye damage/irritation : Not classified  
Respiratory or skin sensitization : Not classified  
Germ cell mutagenicity : Not classified  
Carcinogenicity : Suspected of causing cancer.

#### CUMENE (98-82-8)

IARC group	2B - Possibly carcinogenic to humans
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Reproductive toxicity : Not classified  
STOT-single exposure : Not classified  
STOT-repeated exposure : Not classified  
Aspiration hazard : Not classified  
Viscosity, kinematic : < 1 mm<sup>2</sup>/s Temp.: 'other:' Parameter: 'kinematic viscosity (in mm<sup>2</sup>/s)'

#### CUMENE (98-82-8)

Viscosity, kinematic	0.74 mm <sup>2</sup> /s Temp.: 'other:' Parameter: 'kinematic viscosity (in mm <sup>2</sup> /s)'
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## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

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Residual Fuel Reference Material (64742-95-6)	
LC50 - Fish [1]	9.22 mg/l Source: IUCLID
EC50 - Crustacea [1]	6.14 mg/l Source: IUCLID

CUMENE (98-82-8)	
LC50 - Fish [1]	4.7 mg/l Test organisms (species): Cyprinodon variegatus
EC50 - Crustacea [1]	2.14 mg/l Test organisms (species): Daphnia magna
LC50 - Fish [2]	4.8 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
EC50 72h - Algae [1]	2.01 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
EC50 72h - Algae [2]	1.29 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
ErC50 algae	2.01 mg/l Source: ECHA
NOEC (chronic)	0.35 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic fish	0.38 mg/l Test organisms (species): other: Duration: '28 d'

### 12.2. Persistence and degradability

No additional information available

### 12.3. Bioaccumulative potential

Residual Fuel Reference Material (64742-95-6)	
Partition coefficient n-octanol/water (Log Pow)	2.1 – 6 Source: IUCLID

CUMENE (98-82-8)	
Partition coefficient n-octanol/water (Log Pow)	3.66 Source: HSDB

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.  
Additional information : Flammable vapors may accumulate in the container.

## SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

14.1. UN number	
DOT NA No	: UN1268
UN-No. (TDG)	: Not applicable
UN-No. (IMDG)	: 1268
UN-No. (IATA)	: 1268
14.2. UN proper shipping name	

Proper Shipping Name (DOT) : Petroleum products, n.o.s.  
Proper Shipping Name (TDG) : Not applicable  
Proper Shipping Name (IMDG) : PETROLEUM PRODUCTS, N.O.S.  
Proper Shipping Name (IATA) : Petroleum products, n.o.s.

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### 14.3. Transport hazard class(es)

**DOT**

Transport hazard class(es) (DOT) : 3  
Hazard labels (DOT) : 3



**TDG**

Transport hazard class(es) (TDG) : Not applicable

**IMDG**

Transport hazard class(es) (IMDG) : 3  
Hazard labels (IMDG) : 3



**IATA**

Transport hazard class(es) (IATA) : 3  
Hazard labels (IATA) : 3



### 14.4. Packing group

Packing group (DOT) : III  
Packing group (TDG) : Not applicable  
Packing group (IMDG) : III  
Packing group (IATA) : III

### 14.5. Environmental hazards

Other information : No supplementary information available.

### 14.6. Special precautions for user

**DOT**

UN-No.(DOT) : UN1268

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DOT Special Provisions (49 CFR 172.102) : 144 - If transported as a residue in an underground storage tank (UST), as defined in 40 CFR 280.12, that has been cleaned and purged or rendered inert according to the American Petroleum Institute (API) Standard 1604 (IBR, see 171.7 of this subchapter), then the tank and this material are not subject to any other requirements of this subchapter. However, sediments remaining in the tank that meet the definition for a hazardous material are subject to the applicable regulations of this subchapter.  
B1 - If the material has a flash point at or above 38 C (100 F) and below 93 C (200 F), then the bulk packaging requirements of 173.241 of this subchapter are applicable. If the material has a flash point of less than 38 C (100 F), then the bulk packaging requirements of 173.242 of this subchapter are applicable.  
IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).  
T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3)  
TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following:  
Degree of filling =  $97 / 1 + a (tr - tf)$  Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.  
TP29 - A portable tank having a minimum test pressure of 1.5 bar (150.0 kPa) may be used provided the calculated test pressure is 1.5 bar or less based on the MAWP of the hazardous materials, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

DOT Packaging Exceptions (49 CFR 173.xxx) : 150  
DOT Packaging Non Bulk (49 CFR 173.xxx) : 203  
DOT Packaging Bulk (49 CFR 173.xxx) : 242  
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 60 L  
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 220 L  
DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

### TDG

Emergency Response Guide (ERG) Number : 128

### IMDG

Special provision (IMDG) : 223, 955  
Limited quantities (IMDG) : 5 L  
Excepted quantities (IMDG) : E1  
Packing instructions (IMDG) : P001, LP01  
IBC packing instructions (IMDG) : IBC03  
Tank instructions (IMDG) : T4  
Tank special provisions (IMDG) : TP1, TP29  
EmS-No. (Fire) : F-E - FIRE SCHEDULE Echo - NON-WATER-REACTIVE FLAMMABLE LIQUIDS  
EmS-No. (Spillage) : S-E - SPILLAGE SCHEDULE Echo - FLAMMABLE LIQUIDS, FLOATING ON WATER  
Stowage category (IMDG) : A  
Properties and observations (IMDG) : Immiscible with water.

### IATA

PCA Excepted quantities (IATA) : E1  
PCA Limited quantities (IATA) : Y344  
PCA limited quantity max net quantity (IATA) : 10L  
PCA packing instructions (IATA) : 355  
PCA max net quantity (IATA) : 60L  
CAO packing instructions (IATA) : 366  
CAO max net quantity (IATA) : 220L  
Special provision (IATA) : A3  
ERG code (IATA) : 3L

### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable



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### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

Name	CAS-No.	Listing	Commercial status	Flags
CUMENE	98-82-8	Not present	-	

#### 15.2. International regulations

##### CANADA

#### Residual Fuel Reference Material (64742-95-6)

Listed on the Canadian DSL (Domestic Substances List)

##### EU-Regulations

No additional information available

##### National regulations

#### Residual Fuel Reference Material (64742-95-6)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

#### 15.3. US State regulations

No additional information available

### SECTION 16: Other information

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Revision date : 9/27/2024

Full text of H-phrases	
H225	Highly flammable liquid and vapor
H226	Flammable liquid and vapor
H351	Suspected of causing cancer

Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.