

SAFETY DATA SHEET

Creation Date 16-March-2018

Revision Date 02-April-2024

Revision Number 4

1. Identification

Product Name Aluminium oxide, Aerosol Refractory Paint

Cat No. : 40391

Synonyms No information available

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company

Importer/Distributor

Fisher Scientific
112 Colonnade Road,
Ottawa, ON K2E 7L6,
Canada
Tel: 1-800-234-7437

Emergency Telephone Number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11

Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99

CHEMTREC Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

2. Hazard(s) identification

Classification

WHMIS 2015 Classification Classified as hazardous under the Hazardous Products Regulations (SOR/2015-17)

Extremely flammable aerosol	Category 1
Serious Eye Damage/Eye Irritation	Category 2
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Central nervous system (CNS).	
Health Hazards Not Otherwise Classified	Category 1
Repeated exposure may cause skin dryness or cracking	

Label Elements

Signal Word

Danger

Hazard Statements

Extremely flammable aerosol

Pressurized container: May burst if heated

Causes serious eye irritation
May cause drowsiness and dizziness
Repeated exposure may cause skin dryness or cracking

**Precautionary Statements****Prevention**

Do not spray on an open flame or other ignition source
Avoid breathing dust/fume/gas/mist/vapors/spray
Pressurized container: Do not pierce or burn, even after use
Wash face, hands and any exposed skin thoroughly after handling
Use only outdoors or in a well-ventilated area
Wear protective gloves/protective clothing/eye protection/face protection

Response

IF ON SKIN: Wash with plenty of soap and water
IF INHALED: Remove person to fresh air and keep comfortable for breathing
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
IF exposed or concerned: Get medical advice/attention

Storage

Store in a well-ventilated place. Keep container tightly closed
Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F

Disposal

Dispose of contents/container to an approved waste disposal plant

3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Acetone	67-64-1	35
Ethyl alcohol	64-17-5	20
Aluminum oxide (Al ₂ O ₃)	1344-28-1	20
Propane	74-98-6	12.5
n-Butane	106-97-8	12.5

4. First-aid measures

General Advice

If symptoms persist, call a physician. Do not breathe dust/fume/gas/mist/vapors/spray.

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

Inhalation

Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

Ingestion

Clean mouth with water and drink afterwards plenty of water.

Most important symptoms/effects	. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: May cause pulmonary edema: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting: May cause central nervous system depression
Notes to Physician	Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media	Water spray, carbon dioxide (CO ₂), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.
Unsuitable Extinguishing Media	No information available
Flash Point	-104 °C / -155.2 °F
Method -	No information available
Autoignition Temperature	No information available
Explosion Limits	
Upper	No data available
Lower	No data available
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

Specific Hazards Arising from the Chemical

Flammable. Risk of ignition. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

Hazardous Combustion Products

Carbon monoxide (CO). Carbon dioxide (CO₂).

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Fight fire remotely due to the risk of explosion.

NFPA

Health	Flammability	Instability	Physical hazards
2	4	1	N/A

6. Accidental release measures

Personal Precautions	Use personal protective equipment as required. Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.
Environmental Precautions	Should not be released into the environment.
Methods for Containment and Clean Up	Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

7. Handling and storage

Handling	Do not get in eyes, on skin, or on clothing. Wear personal protective equipment/face protection. Ensure adequate ventilation. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Avoid breathing vapors or mists.
Storage.	Flammables area. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks and flame. Pressurized container: Do not pierce or burn, even after use. Use only outdoors or in a well-ventilated area. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. Incompatible Materials. Strong oxidizing agents.

8. Exposure controls / personal protection

Exposure Guidelines

Component	Alberta	British Columbia	Ontario TWAEV	Quebec	ACGIH TLV	OSHA PEL	NIOSH
Acetone	TWA: 500 ppm TWA: 1200 mg/m ³ STEL: 750 ppm STEL: 1800 mg/m ³	TWA: 250 ppm STEL: 500 ppm	TWA: 500 ppm STEL: 750 ppm	TWA: 500 ppm TWA: 1190 mg/m ³ STEL: 1000 ppm STEL: 2380 mg/m ³	TWA: 250 ppm STEL: 500 ppm	(Vacated) TWA: 750 ppm (Vacated) TWA: 1800 mg/m ³ (Vacated) STEL: 2400 mg/m ³ (Vacated) STEL: 1000 ppm TWA: 1000 ppm TWA: 2400 mg/m ³	IDLH: 2500 ppm TWA: 250 ppm TWA: 590 mg/m ³
Ethyl alcohol	TWA: 1000 ppm TWA: 1880 mg/m ³	STEL: 1000 ppm	STEL: 1000 ppm	STEL: 1000 ppm	STEL: 1000 ppm	(Vacated) TWA: 1000 ppm (Vacated) TWA: 1900 mg/m ³ TWA: 1000 ppm TWA: 1900 mg/m ³	IDLH: 3300 ppm TWA: 1000 ppm TWA: 1900 mg/m ³
Aluminum oxide (Al ₂ O ₃)	TWA: 10 mg/m ³	TWA: 1.0 mg/m ³	TWA: 1 mg/m ³	TWA: 10 mg/m ³	TWA: 1 mg/m ³	(Vacated) TWA: 10 mg/m ³ (Vacated) TWA: 5 mg/m ³ TWA: 15 mg/m ³ TWA: 5 mg/m ³	
Propane	TWA: 1000 ppm		TWA:	TWA: 1000 ppm TWA: 1800 mg/m ³	:	(Vacated) TWA: 1000 ppm (Vacated) TWA: 1800 mg/m ³ TWA: 1000 ppm TWA: 1800 mg/m ³	IDLH: 2100 ppm TWA: 1000 ppm TWA: 1800 mg/m ³
n-Butane	TWA: 1000 ppm	STEL: 1000 ppm	TWA: STEL: 1000 ppm	TWA: 800 ppm TWA: 1900 mg/m ³	STEL: 1000 ppm	(Vacated) TWA: 800 ppm (Vacated) TWA: 1900 mg/m ³	IDLH: 1600 ppm TWA: 800 ppm TWA: 1900 mg/m ³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH: NIOSH - National Institute for Occupational Safety and Health

Engineering Measures

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting/equipment.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection

Goggles

Hand Protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Glove material	Breakthrough time	Glove thickness	Glove comments
Butyl rubber	> 480 minutes	0.5 mm	As tested under EN374-3 Determination of Resistance to

Permeation by Chemicals

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

Recommended Filter type: low boiling organic solvent Type AX Brown conforming to EN371

When RPE is used a face piece Fit Test should be conducted

Environmental exposure controls

Do not allow material to contaminate ground water system.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

9. Physical and chemical properties

Physical State	Liquid Aerosol
Appearance	White
Odor	No information available
Odor Threshold	No information available
pH	No information available
Melting Point/Range	No data available
Boiling Point/Range	-44 °C / -47.2 °F
Flash Point	-104 °C / -155.2 °F
Evaporation Rate	No information available
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	No information available
Vapor Density	No information available
Specific Gravity	No information available
Solubility	Partially miscible
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	No information available
Viscosity	No information available
VOC Content(%)	80

10. Stability and reactivity

Reactive Hazard	None known, based on information available
Stability	Stable under normal conditions.
Conditions to Avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Protect from sunlight and do not expose to temperatures exceeding 50 °C/122 °F.
Incompatible Materials	Strong oxidizing agents
Hazardous Decomposition Products	Carbon monoxide (CO), Carbon dioxide (CO ₂)

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Oral LD50

Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

Dermal LD50

Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

Vapor LC50

Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Acetone	5800 mg/kg (Rat)	> 15800 mg/kg (rabbit) > 7400 mg/kg (rat)	76 mg/l, 4 h, (rat)
Ethyl alcohol	LD50 = 10470 mg/kg OECD 401 (Rat) 3450 mg/kg (Mouse)	Not listed	LC50 = 117-125 mg/l (4h) OECD 403 (rat) 20000 ppm/10H (rat)
Aluminum oxide (Al ₂ O ₃)	> 5000 mg/kg (Rat) (OECD Guideline 401)	Not listed	> 2.3 mg/l 4 h (OECD Guideline 403)
Propane	Not listed	Not listed	LC50 > 20000 ppm (Rat) 4h
n-Butane	Not listed	Not listed	658 mg/L (Rat) 4 h

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Acetone	67-64-1	Not listed	Not listed	Not listed	Not listed	Not listed
Ethyl alcohol	64-17-5	Not listed	Known	A3	Not listed	A3
Aluminum oxide (Al ₂ O ₃)	1344-28-1	Not listed	Not listed	Not listed	Not listed	Not listed
Propane	74-98-6	Not listed	Not listed	Not listed	Not listed	Not listed
n-Butane	106-97-8	Not listed	Not listed	Not listed	Not listed	Not listed

IARC (International Agency for Research on Cancer)

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Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

NTP: (National Toxicity Program)

Known - Known Carcinogen

Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

A1 - Known Human Carcinogen

A2 - Suspected Human Carcinogen

A3 - Animal Carcinogen

ACGIH: (American Conference of Governmental Industrial Hygienists)

NTP: (National Toxicity Program)

ACGIH: (American Conference of Governmental Industrial Hygienists)

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure Central nervous system (CNS)

STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects, both acute and delayed Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: May cause pulmonary edema: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting: May cause central nervous system depression

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Acetone	NOEC = 430 mg/l (algae; 96 h)	Oncorhynchus mykiss: LC50 = 5540 mg/l 96h Alburnus alburnus: LC50 = 11000 mg/l 96h Leuciscus idus: LC50 = 11300 mg/L/48h Salmo gairdneri: LC50 = 6100 mg/L/24h	EC50 = 14500 mg/L/15 min	EC50 = 8800 mg/L/48h EC50 = 12700 mg/L/48h EC50 = 12600 mg/L/48h
Ethyl alcohol	EC50 (72h) = 275 mg/l (Chlorella vulgaris)	Fathead minnow (Pimephales promelas) LC50 = 14200 mg/l/96h	Photobacterium phosphoreum: EC50 = 34634 mg/L/30 min Photobacterium phosphoreum: EC50 = 35470 mg/L/5 min	EC50 = 9268 mg/L/48h EC50 = 10800 mg/L/24h

Persistence and Degradability Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation No information available.

Mobility Will likely be mobile in the environment due to its volatility.

Component	log Pow
Acetone	-0.24
Ethyl alcohol	-0.32
Propane	1.09
n-Butane	2.31

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Acetone - 67-64-1	U002	-

14. Transport information

DOT

UN-No UN1950
Proper Shipping Name AEROSOLS
Hazard Class 2.1

TDG

UN-No UN1950
Proper Shipping Name AEROSOLS
Hazard Class 2.1

IATA

UN-No UN1950
 Proper Shipping Name AEROSOLS, FLAMMABLE
 Hazard Class 2.1

IMDG/IMO

UN-No UN1950
 Proper Shipping Name AEROSOLS
 Hazard Class 2.1

15. Regulatory information

International Inventories

Component	CAS-No	DSL	NDSL	TSCA	TSCA Inventory notification - Active-Inactive	EINECS	ELINCS	NLP
Acetone	67-64-1	X	-	X	ACTIVE	200-662-2	-	-
Ethyl alcohol	64-17-5	X	-	X	ACTIVE	200-578-6	-	-
Aluminum oxide (Al ₂ O ₃)	1344-28-1	X	-	X	ACTIVE	215-691-6	-	-
Propane	74-98-6	X	-	X	ACTIVE	200-827-9	-	-
n-Butane	106-97-8	X	-	X	ACTIVE	203-448-7	-	-

Component	CAS-No	IECSC	KECL	ENCS	ISHL	TCSI	AICS	NZIoC	PICCS
Acetone	67-64-1	X	KE-29367	X	X	X	X	X	X
Ethyl alcohol	64-17-5	X	KE-13217	X	X	X	X	X	X
Aluminum oxide (Al ₂ O ₃)	1344-28-1	X	KE-01012	X	X	X	X	X	X
Propane	74-98-6	X	KE-29258	X	X	X	X	X	X
n-Butane	106-97-8	X	KE-03751	X	X	X	X	X	X

Legend:

X - Listed '-' - Not Listed

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances**IECSC** - Chinese Inventory of Existing Chemical Substances**KECL** - Korean Existing and Evaluated Chemical Substances**ENCS** - Japanese Existing and New Chemical Substances**AICS** - Australian Inventory of Chemical Substances**PICCS** - Philippines Inventory of Chemicals and Chemical Substances**Canada**

SDS in compliance with provisions of information as set out in Canadian Standard - Part 4, Schedule 1 and 2 of the Hazardous Products Regulations (HPR) and meets the requirements of the HPR (Paragraph 13(1)(a) of the Hazardous Products Act (HPA)).

Component	Canada - National Pollutant Release Inventory (NPRI)	Canadian Environmental Protection Agency (CEPA) - List of Toxic Substances	Canada's Chemicals Management Plan (CEPA)
Acetone	Part 4 Substance		
Ethyl alcohol	Part 5, Individual Substances Part 4 Substance		
Aluminum oxide (Al ₂ O ₃)	Part 1, Group A Substance		
Propane	Part 5, Individual Substances Part 4 Substance		
n-Butane	Part 4 Substance		Subject to Monitoring and Surveillance Activities

Legend

NPRI - National Pollutant Release Inventory

Other International Regulations**Authorisation/Restrictions according to EU REACH**

Component	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Acetone	-	Use restricted. See item 75. (see link for restriction details)	-
n-Butane	-	Use restricted. See item 28. (see link for restriction details) Use restricted. See item 29. (see link for restriction details) Use restricted. See item 75. (see link for restriction details)	-

REACH links

<https://echa.europa.eu/substances-restricted-under-reach>

Safety, health and environmental regulations/legislation specific for the substance or mixture

Component	CAS-No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Acetone	67-64-1	Listed	Not applicable	Not applicable	Not applicable
Ethyl alcohol	64-17-5	Listed	Not applicable	Not applicable	Not applicable
Aluminum oxide (Al ₂ O ₃)	1344-28-1	Listed	Not applicable	Not applicable	Not applicable
Propane	74-98-6	Listed	Not applicable	Not applicable	Not applicable
n-Butane	106-97-8	Listed	Not applicable	Not applicable	Not applicable

Component	CAS-No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Acetone	67-64-1	Not applicable	Not applicable	Not applicable	Annex I - Y42
Ethyl alcohol	64-17-5	Not applicable	Not applicable	Not applicable	Annex I - Y42
Aluminum oxide (Al ₂ O ₃)	1344-28-1	Not applicable	Not applicable	Not applicable	Not applicable
Propane	74-98-6	Not applicable	Not applicable	Not applicable	Not applicable
n-Butane	106-97-8	Not applicable	Not applicable	Not applicable	Not applicable

16. Other information

Prepared By

Product Safety Department
Email: chem.techinfo@thermofisher.com
www.thermofisher.com

Creation Date

16-March-2018

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02-April-2024

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02-April-2024

Revision Summary

New emergency telephone response service provider.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS