

SAFETY DATA SHEET

Creation Date 16-Mar-2018 Revision Date 02-Apr-2024 Revision Number 6

1. Identification

Product Name Graphite, colloidal, lubricant, aerosol spray

Cat No. : 41775

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

Thermo Fisher Scientific Chemicals, Inc. 30 Bond Street Ward Hill, MA 01835-8099

Tel: 800-343-0660 Fax: 800-322-4757

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

Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Extremely flammable aerosol Category 1
Skin Corrosion/Irritation Category 2
Serious Eye Damage/Eye Irritation Category 2
Reproductive Toxicity Category 2
Specific target organ toxicity (single exposure) Category 3
Target Organs - Central nervous system (CNS), Respiratory system.
Aspiration Toxicity Category 1

Label Elements

Signal Word

Danger

Hazard Statements

Extremely flammable aerosol

Pressurized container: May burst if heated

May be fatal if swallowed and enters airways Causes skin irritation Causes serious eye irritation May cause drowsiness or dizziness Suspected of damaging the unborn child



Precautionary Statements

Prevention

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Use personal protective equipment as required

Wash face, hands and any exposed skin thoroughly after handling

Wear eye/face protection

Avoid breathing dust/fume/gas/mist/vapors/spray

Use only outdoors or in a well-ventilated area

Keep away from heat/sparks/open flames/hot surfaces. - No smoking

Do not spray on an open flame or other ignition source

Pressurized container: Do not pierce or burn, even after use

Response

IF exposed or concerned: Get medical attention/advice

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Skin

IF ON SKIN: Wash with plenty of soap and water

If skin irritation occurs: Get medical advice/attention

Take off contaminated clothing and wash before reuse

Eyes

IF IN EYES: 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

Ingestion

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician

Do NOT induce vomiting

Storage

Store locked up

Store in a well-ventilated place. Keep container tightly closed

Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F

Disposa

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Very toxic to aquatic life with long lasting effects

WARNING. Reproductive Harm - https://www.p65warnings.ca.gov/.

3. Composition/Information on Ingredients

Component	CAS No	Weight %
n-Heptane	142-82-5	45
Propane	74-98-6	15
Isopropyl alcohol	67-63-0	15
Butane	106-97-8	15
Toluene	108-88-3	5

Graphite	7782-42-5	5

4. First-aid measures

General Advice If symptoms persist, call a physician.

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 and

effects

None reasonably foreseeable. 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 (CO2), dry chemical, alcohol-resistant foam. Water mist may

be used to cool closed containers.

Unsuitable Extinguishing Media No information available

Flash Point -97 °C / -142.6 °F

Method - No information available

Autoignition Temperature

Explosion Limits

No information available

UpperNo data availableLowerNo 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. Do not allow run-off from fire-fighting to enter drains or water courses.

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.

NFPA

HealthFlammabilityInstabilityPhysical hazards341N/A

	6. Accidental release measures
Personal Precautions	Use personal protective equipment as required. Ensure adequate ventilation.
Environmental Precautions	Should not be released into the environment. See Section 12 for additional Ecological

Information. Avoid release to the environment. Collect spillage.

Methods for Containment and Clean Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

7. Handling and storage

Do not get in eyes, on skin, or on clothing. Wear personal protective equipment/face Handling

protection. Ensure adequate ventilation. Avoid ingestion and inhalation.

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	ACGIH TLV	OSHA PEL	NIOSH	Mexico OEL (TWA)
n-Heptane	TWA: 400 ppm STEL: 500 ppm	(Vacated) TWA: 400 ppm (Vacated) TWA: 1600 mg/m³ (Vacated) STEL: 500 ppm (Vacated) STEL: 2000 mg/m³ TWA: 500 ppm	IDLH: 750 ppm TWA: 85 ppm TWA: 350 mg/m³ Ceiling: 440 ppm Ceiling: 1800 mg/m³	TWA: 400 ppm STEL: 500 ppm
Propane	:	TWA: 2000 mg/m³ (Vacated) TWA: 1000 ppm (Vacated) TWA: 1800 mg/m³ TWA: 1000 ppm TWA: 1800 mg/m³	IDLH: 2100 ppm TWA: 1000 ppm TWA: 1800 mg/m ³	TWA: 1000 ppm
Isopropyl alcohol	TWA: 200 ppm STEL: 400 ppm	(Vacated) TWA: 400 ppm (Vacated) TWA: 980 mg/m³ (Vacated) STEL: 500 ppm (Vacated) STEL: 1225 mg/m³ TWA: 400 ppm TWA: 980 mg/m³	IDLH: 2000 ppm TWA: 400 ppm TWA: 980 mg/m³ STEL: 500 ppm STEL: 1225 mg/m³	TWA: 200 ppm STEL: 400 ppm
Butane	STEL: 1000 ppm	(Vacated) TWA: 800 ppm (Vacated) TWA: 1900 mg/m³	IDLH: 1600 ppm TWA: 800 ppm TWA: 1900 mg/m ³	TWA: 1000 ppm
Toluene	TWA: 20 ppm	(Vacated) TWA: 100 ppm (Vacated) TWA: 375 mg/m³ Ceiling: 300 ppm (Vacated) STEL: 150 ppm (Vacated) STEL: 560 mg/m³ TWA: 200 ppm	IDLH: 500 ppm TWA: 100 ppm TWA: 375 mg/m³ STEL: 150 ppm STEL: 560 mg/m³	TWA: 20 ppm
Graphite	TWA: 2 mg/m³	(Vacated) TWA: 2.5 mg/m³ (Vacated) TWA: 10 mg/m³ (Vacated) TWA: 5 mg/m³ TWA: 15 mg/m³ TWA: 5 mg/m³	IDLH: 1250 mg/m³ TWA: 2.5 mg/m³	TWA: 2 mg/m³ TWA: 10 mg/m³

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.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by

OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard

EN166.

Skin and body protectionWear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection 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.

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

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State Liquid Aerosol

Appearance Black

Odor No information available
Odor Threshold No information available
pH No information available

Melting Point/RangeNo data availableBoiling Point/RangeNo information availableFlash Point-97 °C / -142.6 °FEvaporation RateNo information available

Flammability (solid,gas) Not applicable

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

Decomposition Temperature

No information available
No information available

Viscosity No information available

VOC Content(%) 99

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.

Keep away from open flames, hot surfaces and sources of ignition.

Incompatible Materials Strong oxidizing agents

Hazardous Decomposition Products Carbon monoxide (CO), Carbon dioxide (CO2)

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Oral LD50Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.Dermal LD50Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.Vapor LC50Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation	
n-Heptane	>2000 mg/kg (rat)	LD50 = 3000 mg/kg (Rabbit)	LC50 > 73.5 mg/L (Rat) 4 h	
Propane	Not listed	Not listed	LC50 > 20000 ppm (Rat) 4h	
Isopropyl alcohol	5045 mg/kg (Rat) 3600 mg/kg (Mouse)	12800 mg/kg (Rat)	72.6 mg/L (Rat) 4 h	
Butane	Not listed	Not listed	658 mg/L (Rat) 4 h	
Toluene	> 5000 mg/kg (Rat)	LD50 = 12000 mg/kg (Rabbit)	26700 ppm (Rat) 1 h	
Graphite	Not listed	Not listed	LC50 > 2000 mg/m ³ (Rat) 4 h	

Toxicologically Synergistic

No information available

Products

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
n-Heptane	142-82-5	Not listed				
Propane	74-98-6	Not listed				
Isopropyl alcohol	67-63-0	Not listed				
Butane	106-97-8	Not listed				
Toluene	108-88-3	Not listed				
Graphite	7782-42-5	Not listed				

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental EffectsNo information available.

Teratogenicity No information available.

STOT - single exposure Central nervous system (CNS) Respiratory system

STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting:

delayed

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

The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
n-Heptane	Not listed	LC50: = 375.0 mg/L, 96h (Cichlid fish)	Not listed	EC50: >10 mg/L/24h
Isopropyl alcohol	EC50: > 1000 mg/L, 72h (Desmodesmus subspicatus) EC50: > 1000 mg/L, 96h (Desmodesmus subspicatus)	LC50: = 9640 mg/L, 96h flow-through (Pimephales promelas) LC50: > 1400000 μg/L, 96h (Lepomis macrochirus) LC50: = 11130 mg/L, 96h static (Pimephales promelas) LC50: = 10000000 μg/L, 96h (Daphnia)	= 35390 mg/L EC50 Photobacterium phosphoreum 5 min	13299 mg/L EC50 = 48 h 9714 mg/L EC50 = 24 h
Toluene	EC50: = 12.5 mg/L, 72h static (Pseudokirchneriella subcapitata) EC50: > 433 mg/L, 96h (Pseudokirchneriella subcapitata)	50-70 mg/L LC50 96 h 5-7 mg/L LC50 96 h 15-19 mg/L LC50 96 h 28 mg/L LC50 96 h 12 mg/L LC50 96 h	EC50 = 19.7 mg/L 30 min	EC50: = 11.5 mg/L, 48h (Daphnia magna) EC50: 5.46 - 9.83 mg/L, 48h Static (Daphnia magna)
Graphite	Not listed	LC50: > 100 mg/L, 96h semi-static (Danio rerio)	Not listed	Not listed

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
n-Heptane	4.66
Propane	1.09
Isopropyl alcohol	0.05
Butane	2.31
Toluene	2.73

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
Toluene - 108-88-3	U220	-

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.

<u>IATA</u>

UN-No UN1950

Proper Shipping Name AEROSOLS, FLAMMABLE

Hazard Class 2.1

IMDG/IMO

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UN-No Proper Shipping Name

UN1950 AEROSOLS

Hazard Class

21

15. Regulatory information

United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
n-Heptane	142-82-5	X	ACTIVE	-
Propane	74-98-6	X	ACTIVE	-
Isopropyl alcohol	67-63-0	X	ACTIVE	-
Butane	106-97-8	X	ACTIVE	-
Toluene	108-88-3	X	ACTIVE	-
Graphite	7782-42-5	X	ACTIVE	-

Legend:

TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT)

Not applicable

TSCA 12(b) - Notices of Export

Not applicable

International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
n-Heptane	142-82-5	Χ	-	205-563-8	Χ	Χ	Χ	Х	Χ	KE-18271
Propane	74-98-6	Х	-	200-827-9	Х	Х	Х	Х	Х	KE-29258
Isopropyl alcohol	67-63-0	Х	-	200-661-7	Χ	Χ	Χ	Χ	Х	KE-29363
Butane	106-97-8	Χ	-	203-448-7	Χ	Х	Χ	Χ	Χ	KE-03751
Toluene	108-88-3	Χ	-	203-625-9	Χ	Χ	Χ	Х	Х	KE-33936
Graphite	7782-42-5	Х	-	231-955-3	Х	-		Х	Х	KE-18101

KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Component	CAS No	Weight %	SARA 313 - Threshold Values %	SARA 313 - Reporting threasholds
Isopropyl alcohol	67-63-0	15	1.0 %	-
Toluene	108-88-3	5	1.0 %	-

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

• • • • •	1 (0.00				
	Component	CWA - Hazardous	CWA - Reportable	CWA - Toxic Pollutants	CWA - Priority Pollutants
	•	Substances	Quantities		

^{&#}x27;-' - Not Listed

Toluene	X	1000 lb	X	X

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Toluene	X		-

OSHA - Occupational Safety and

Not applicable

Health Administration

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

Component	Hazardous Substances RQs	CERCLA Extremely Hazardous Substances RQs	SARA Reportable Quantity (RQ)
Toluene	1000 lb	-	1000 lb 454 ka

California Proposition 65

This product contains the following Proposition 65 chemicals.

Component	CAS No	California Prop. 65	Prop 65 NSRL	Category
Toluene	108-88-3	Developmental	-	Developmental

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
n-Heptane	X	X	X	-	X
Propane	X	X	X	-	X
Isopropyl alcohol	X	X	X	-	X
Butane	X	Х	X	-	X
Toluene	X	X	X	X	X
Graphite	X	X	X	-	-

U.S. Department of Transportation

Reportable Quantity (RQ): Y
DOT Marine Pollutant Y
DOT Severe Marine Pollutant N

U.S. Department of Homeland

Security

This product contains the following DHS chemicals:

Legend - STQs = Screening Threshold Quantities, APA = A placarded amount

Component	DHS Chemical Facility Anti-Terrorism Standard
Propane	Release STQs - 60000lb
Butane	Release STQs - 10000lb

Other International Regulations

Mexico - Grade No information available

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization		REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
n-Heptane	142-82-5	-	Use restricted. See item 75.	-

			(see link for restriction	
Dronono	74-98-6		details)	
Propane		-		
Isopropyl alcohol	67-63-0	-	Use restricted. See item -	
			75.	
			(see link for restriction	
_			details)	
Butane	106-97-8	-	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)	
Toluene	108-88-3	-	Use restricted. See item -	
			48.	
			(see link for restriction	
			details)	
			Use restricted. See item	
			75.	
			(see link for restriction	
			details)	
Graphite	7782-42-5	=		

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)
n-Heptane	142-82-5	Listed	Not applicable	Not applicable	Not applicable
Propane	74-98-6	Listed	Not applicable	Not applicable	Not applicable
Isopropyl alcohol	67-63-0	Listed	Not applicable	Not applicable	Not applicable
Butane	106-97-8	Listed	Not applicable	Not applicable	Not applicable
Toluene	108-88-3	Listed	Not applicable	Not applicable	Not applicable
Graphite	7782-42-5	Listed	Not applicable	Not applicable	Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)? Not applicable

Other International Regulations

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)
n-Heptane	142-82-5	Not applicable	Not applicable	Not applicable	Not applicable
Propane	74-98-6	Not applicable	Not applicable	Not applicable	Not applicable
Isopropyl alcohol	67-63-0	Not applicable	Not applicable	Not applicable	Annex I - Y42
Butane	106-97-8	Not applicable	Not applicable	Not applicable	Not applicable
Toluene	108-88-3	Not applicable	Not applicable	Not applicable	Annex I - Y42
Graphite	7782-42-5	Not applicable	Not applicable	Not applicable	Not applicable

16. Other information

Prepared By Health, Safety and Environmental Department

Email: chem.techinfo@thermofisher.com

www.thermofisher.com

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 16-Mar-2018

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 02-Apr-2024

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 02-Apr-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