

406B-A

SUPER WASH™ ELECTRONICS CLEANER

Safety Data Sheet

Section 1: Identification

Product Identifier and Other Means of Identification

Product Name: 406B-a**Other Means of Identification:** Super Wash™ Electronics Cleaner**Related Part #** 406B-425G, 406B-425GCA

Recommended Use and Restriction on Use

Use: Zero residue electronic cleaner**Uses Advised Against:** Do NOT use on live circuits or in presence of ignition source

Details of Manufacturer or Importer

Manufacturer

MG Chemicals
1210 Corporate Drive
Burlington, Ontario L7L 5R6
CANADA

MG Chemicals (Head Office)
9347-193 Street
Surrey, British Columbia V4N 4E7
CANADA

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FAX +1-800-340-0773
E-MAIL support@mgchemicals.com
WEB www.mgchemicals.com

☎ +1-905-331-1396
FAX +1-905-331-2682
E-MAIL info@mgchemicals.com

E-MAIL (Competent Person): sds@mgchemicals.com

Emergency Phone Number

For hazardous material incidents ONLY (leaks, spills, fires, exposures or accidents)
USA or CANADA—Call CHEMTREC at **+1-800-424-9300**

For emergencies involving the transport of dangerous goods; 24/7 service
CANADA—Call CANUTEC collect at **+1-613-996-6666** or ***666** on cellular phones

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Section 2: Hazard(s) Identification

Classification of Hazardous Chemical
GHS Categories

Criteria	Category	Signal Word	Pictograms
Aspiration Hazard	1	Danger	Health
Reproductive Toxicity	2	Warning	Health
Flammable Aerosol	2	Warning	Flame
Gases Under Pressure	Liquefied gas	Warning	Gas cylinder
Skin Irritation	2	Warning	Exclamation
Specific Target Organ Toxicity Single Exposure	3	Warning	Exclamation
Hazardous to the Aquatic Environment Chronic	2	none	Environment



Note: The degree of severity is ranked within each hazard class from 1 (Highest Severity) to up to 5 (Lowest Severity), which is opposite to HMIS and NFPA conventions. Severity category rankings do not allow comparisons between classes.

Label Elements

Signal Word	DANGER
Pictograms	Hazard Statements
	H223: Flammable aerosol
	H280: Contains gas under pressure; may explode if heated
	H304: May be fatal if swallowed and enters airways H361: Suspected of damaging fertility or the unborn child

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406B-A**SUPER WASH™ ELECTRONICS CLEANER***Continued...*

Pictograms	Hazard Statements
	H315: Causes skin irritation H336: May cause drowsiness or dizziness
	H411: Toxic to aquatic life with long lasting effects
Prevention	Precautionary Statements
P102	Keep out of reach of children.
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing mist/vapors/spray.
P271	Use only outdoors or in a well-ventilated area.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection.
P273	Avoid release to the environment.
Response	Precautionary Statements
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P301 + P310, P331	IF SWALLOWED: Immediately call a POISON CENTER/doctor. Do NOT induce vomiting.
P302 + P352	IF ON SKIN: Wash with plenty of water.
P332 + P313	If skin irritation occurs: Get medical advice/attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312	Call a POISON CENTER/doctor if you feel unwell.
P391	Collect spillage.

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406B-A**SUPER WASH™ ELECTRONICS CLEANER***Continued...*

Storage	Precautionary Statements
P410 + P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C [122 °F].
P403	Store in a well-ventilated place.
P405	Store locked up.
Disposal	Precautionary Statements
P501	Dispose of contents/container in accordance to local/regional/international regulations.

Hazards Not Otherwise Classified

Other Criteria	Hazard Statements/Precautionary Statement	Signal Word	Pictograms
Defats skin	Repeated exposure may cause skin dryness or cracking.	None	None

Section 3: Composition/Information on Ingredients

CAS #	Chemical Name	%(weight)
107-83-5	methyl-2-pentane	15-40%
96-14-0	methyl-3-pentane	10-30%
79-29-8	dimethyl-2,3-butane	10-30%
811-97-2	1,1,1,2-tetrafluoroethane ^{a)}	25%
75-83-2	dimethyl-2,2-butane	7-13%
109-66-0	pentane	3-7%
110-54-3	n-hexane	1-5%

a) Commonly referred to as HFC-134a

406B-A**SUPER WASH™ ELECTRONICS CLEANER****Section 4: First-Aid Measures**

<i>Exposure Condition</i>	<i>GHS Code/Symptoms/Precautionary Statements</i>
IF SWALLOWED	P301 + P310, P331, P308 + P313
Immediate Symptoms	<i>nausea, weakness, headache, abdominal pain, drowsiness, dizziness, unconsciousness</i>
Response	Immediately call a POISON CENTER/doctor. Do NOT induce vomiting. IF exposed or concerned: Get medical advice/attention.
IF ON SKIN	P302 + P352, P332 + P313, P362 + P364, P308 + P313
Immediate Symptoms	<i>dry skin, redness, irritation</i>
Response	Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. IF exposed or concerned: Get medical advice/attention.
IF INHALED	P304 + P340, P312, P308 + P313
Immediate Symptoms	<i>nausea, weakness, headache, drowsiness, dizziness, respiratory irritation, unconsciousness</i>
Delayed Symptoms	<i>deep and rapid breathing, nausea</i>
Response	Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. IF exposed or concerned: Get medical advice/attention.
IF IN EYES	P305 + P351 + P338, P308 + P313
Immediate Symptoms	<i>low toxicity: redness, pain</i>
Response	Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice/attention.

406B-A**SUPER WASH™ ELECTRONICS CLEANER****Section 5: Fire-Fighting Measures**

Extinguishing Media	In case of fire: Use dry chemical, carbon dioxide, chemical foam. Use water spray to cool containers.
Specific Hazards	<p>The vapors are heavier than air and may accumulate in low-lying areas. Vapors may travel long distances and ignite at an ignition source, which can cause a flashback or an explosion.</p> <p>Prevent fire-fighting wash from entering waterway or sewer system.</p>
Combustion Products	Produces carbon oxides (CO, CO ₂), fluorinated compounds, and hydrogen fluorides.
Fire-Fighter	Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

Section 6: Accidental Release Measures

Personal Protection	See personal protection recommendations in Section 8.
Precautions for Response	Remove or keep away all sources of extreme heat or open flames. Avoid breathing the mist/spray/vapors.
Environmental Precautions	Avoid releasing to the environment. Prevent spill from entering drains and waterways.
Containment Methods	Not applicable
Cleaning Methods	Collect liquid in a sealable, solvent-resistant container. Sprinkle inert absorbent compound onto spill, then sweep into the container. Wash spill area with soap and water to remove the last traces of residue.
Disposal Methods	Dispose of spill waste according to Section 13.

406B-A**SUPER WASH™ ELECTRONICS CLEANER****Section 7: Handling and Storage****Prevention**

Keep out of reach of children.

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use.

Avoid breathing mist/vapors/spray. Use only outdoors or in a well-ventilated area.

Handling

Wear protective gloves/protective clothing/eye protection/face protection.

Wash hands thoroughly after handling.

Avoid release to the environment.

Storage

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

Store in a well-ventilated place.

Store locked up.

Section 8: Exposure Controls/Personal Protection**Substances with Occupational Exposure Limit Values**

Chemical Name	Country	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
methyl-2-pentane <i>Hexane isomers</i> (except <i>n</i> -Hexane)	ACGIH	500 ppm	1 000 ppm
	U.S.A. OSHA PEL	(500 ppm) ^{a)}	(1 000 ppm) ^{a)}
	Canada AB	500 ppm	1 000 ppm
	Canada BC	200 ppm	Not established
	Canada ON	500 ppm	1 000 ppm
	Canada QC	500 ppm	1 000 ppm
methyl-3-pentane <i>Hexane isomers</i> (except <i>n</i> -Hexane)	ACGIH	500 ppm	1 000 ppm
	U.S.A. OSHA PEL	(500 ppm) ^{a)}	(1 000 ppm) ^{a)}
	Canada AB	500 ppm	1 000 ppm
	Canada BC	200 ppm	Not established
	Canada ON	500 ppm	1 000 ppm
	Canada QC	500 ppm	1 000 ppm

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Chemical Name	Country	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
dimethyl-2,3-butane <i>Hexane isomers</i> <i>(except n-Hexane)</i>	ACGIH U.S.A. OSHA PEL Canada AB Canada BC Canada ON Canada QC	500 ppm (500 ppm) ^{a)} 500 ppm 200 ppm 500 ppm 500 ppm	1 000 ppm (1 000 ppm) ^{a)} 1 000 ppm Not established 1 000 ppm 1 000 ppm
1,1,1,2-tetrafluoroethane	<i>MG Chemicals</i> ^{a)} ACGIH U.S.A. OSHA PEL Canada	1 000 ppm Not established Not established Not established	Not established Not established Not established Not established
dimethyl-2,2-butane <i>Hexane isomers</i> <i>(except n-Hexane)</i>	ACGIH U.S.A. OSHA PEL Canada AB Canada BC Canada ON Canada QC	500 ppm (500 ppm) ^{a)} 500 ppm 200 ppm 500 ppm 500 ppm	1 000 ppm (1 000 ppm) ^{a)} 1 000 ppm Not established 1 000 ppm 1 000 ppm
pentane	ACGIH U.S.A. OSHA PEL Canada AB Canada BC Canada ON Canada QC	600 ppm 1 000 ppm 600 ppm 600 ppm 600 ppm 120 ppm	Not established Not established Not established Not established Not established Not established
n-hexane	ACGIH U.S.A. OSHA PEL Canada AB Canada BC Canada ON Canada QC	50 ppm ^{b)} 500 ppm 50 ppm 20 ppm ^{b)} 50 ppm ^{b)} 50 ppm	Not established Not established Not established Not established Not established Not established

Note: Ingredients are listed in descending weight contribution order (from greatest to least). The ACGIH¹, OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits from RTECS database² and from suppliers' SDS were also consulted. Short term exposure limits (STEL) are for 15 min and long term permissible exposure limits (PEL) for 8 h.

a) Value vacated (retracted) under court order, but still in effect in some states.

b) Skin – significant exposure through skin route

Engineering Controls

Ventilation

Keep airborne concentrations below the occupational exposure limits (OEL).

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406B-A**SUPER WASH™ ELECTRONICS CLEANER****Personal Protective Equipment****Eye protection**

Wear appropriate protective eyeglasses or chemical safety goggles.

RECOMMENDATION: Ensure that glasses have side shields for lateral protection.

Skin Protection

For likely contacts, use of protective butyl rubber or other chemically resistant gloves.

For incidental contacts, use nitrile or other chemically resistant gloves.

Respiratory Protection

For over-exposures up to 10 x OEL of mist/vapors/spray, wear respirator such as a half-mask respirator with organic vapor cartridges.

Above 10 x OEL, use a positive-pressure, air-supplied respirator or a self-contained breathing apparatus.

RECOMMENDATION: Consult your local safety supply store to ensure that your respirator has a NIOSH (U.S.) approved filter cartridges appropriate for the ingredients listed in Section 3. The respirator should be fitted to the employee by a professional. Ensure vapor cartridges are stored in sealed plastic bags when not being used.

General Hygiene Considerations

Wash hands thoroughly with water and soap after handling.

406B-A**SUPER WASH™ ELECTRONICS CLEANER****Section 9: Physical and Chemical Properties**

Physical State	Liquid, in aerosol format	Lower Flammability Limit	1%
Appearance	Clear	Upper Flammability Limit	7%
Odor	Mild hydrocarbon	Vapor Pressure @20 °C	33 kPa [250 mmHg]
Odor Threshold	Not available	Vapor Density	3 (Air = 1)
pH	Not available	Specific Gravity	0.66
Freezing/Melting Point	Not available	Solubility in Water	Immiscible
Boiling Point	52 °C [125 °F]	Partition Coefficient	Not available
Flash Point ^{a)}	-29 °C [-20 °F]	Auto-ignition Temperature	Not available
Evaporation Rate	0.8 (Ether = 1)	Decomposition Temperature	Not available
Flammability (solid, gas)	Not applicable	Viscosity @40 °C	<20.5 mm ² /s

a) Closed cup flash point

Section 10: Stability and Reactivity

Reactivity	Not available
Chemical Stability	Chemically stable at normal temperatures and pressures
Conditions to Avoid	Temperatures above 50 °C [122 °F], open flames, other ignition sources and incompatible substances.
Incompatibilities	Strong oxidizing agents, strong acids, strong bases, halogenated compounds, aluminum at temperatures ≥49 °C [>120 °F], peroxides.
Polymerization	Will not occur
Decomposition	Will not decompose under normal conditions. For thermal decomposition, see combustion products in Section 5.

406B-A**SUPER WASH™ ELECTRONICS CLEANER****Section 11: Toxicological Information****Summary of Effects and Symptoms by Routes of Exposure**

Skin	May cause dry skin, redness, and irritation.
Eyes	Low toxicity: May cause redness and pain.
Inhalation	May cause nose, throat and lung irritation. Overexposure may lead to visual impairment and central nervous system effects such as dizziness, drowsiness, or weakness
Ingestion	Swallowing the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis. See inhalation symptoms.
Chronic	Prolonged or repeated exposure may cause skin dryness, cracking, as well as defatting the skin. Ingestion or inhalation of paint material, mist, or vapor during pregnancy may increase the chances fetal death and developmental defects.

Acute Toxicity (Lethal Exposure Concentrations)

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation
methyl-2-pentane	Not available	Not available	3 125 ppm 4 h Rat ^{a)}
methyl-3-pentane	Not available	Not available	Not available
dimethyl-2,3-butane	Not available	Not available	Not available
1,1,1,2-tetrafluoroethane	Not available	Not available	1 500 g/m ³ 4 h Rat
dimethyl-2,2-butane	Not available	Not available	Not available
n-hexane	15 480 mg/kg Rat	>1.3 g/kg Rabbit	627 000 ppm 3 min Rat

Note: Toxicity data from the RTECS² and ECHA databases were consulted. The data from supplier (M)SDS were also consulted.

a) Supplier SDS

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406B-A**SUPER WASH™ ELECTRONICS CLEANER****Other Toxicological Effects****Skin corrosion/irritation**

Causes skin irritation.

Serious eye damage/irritation

Based on available data, the classification criteria are not met.

Sensitization
(allergic reactions)

Based on available data, the classification criteria are not met.

Carcinogenicity
(risk of cancer)

Not classified or listed as a carcinogen by IARC, ACGIH, CA Prop 65, or NTP.

Mutagenicity
(risk of heritable genetic effects)

Based on available data, the classification criteria are not met.

Reproductive Toxicity
(risk to sex functions)

Based on available data, the classification criteria are not met.

Teratogenicity
(risk of fetus malformation)

The n-hexane component was found to harm fetus in animal studies.

STOT-single exposure

Hexane isomers can affect the central nervous system by inhalation causing drowsiness or dizziness.

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

Mixture is a class 1 aspiration hazard. It contains over 10% class 1 aspiration hazard components and has a mixture viscosity of $<20.5 \text{ mm}^2/\text{s}$ at 40°C .

406B-A**SUPER WASH™ ELECTRONICS CLEANER**

Section 12: Ecological Information

Ecological classifications are based on the IMDG/GHS criteria in conjunction with ecotoxicological data from our suppliers, the European Chemical Agency database (<http://echa.europa.eu>), and other reliable sources.

Similar mixtures of isoalkanes C6-C7 with <5% n-hexane have a LC50 of 11.4 mg/L for rainbow trout (*Oncorhynchus mykiss*) 96 h, and an EL50 of 3.0 mg/L water flea (*Daphnia magna*) 48 h.

Acute Ecotoxicity

See chronic ecotoxicity.

Chronic Ecotoxicity

Category 2

Toxic to aquatic life with long lasting effects

Avoid release to the environment. Collect spillage.

Biodegradability

Not available

Other Effects

Actual VOC (Volatile Organic Compounds) content according to the US (EPA) and Canadian (CEPA) authorities.

Actual VOC = 75% [495 g/L]

Section 13: Disposal Information

Dispose of contents in accordance with all local, regional, national, and international regulations.

406B-A**SUPER WASH™ ELECTRONICS CLEANER****Section 14: Transport Information****Ground**

Refer to TDG (Canadian Transportation of Dangerous Goods regulations) and **USA DOT 49 CFR** (Parts 100 to 185) **Regulations.**

Limited Quantity**Air**

Refer to ICAO-IATA Dangerous Goods Regulations.

Limited Quantity**UN number:** UN1950**Shipping Name:**

AEROSOLS, flammable

Class: 2.1**Packing Group:** Not applicable**Marine Pollutant:** Yes**Sea**

Refer to IMDG regulations.

Limited Quantity**UN number:** UN1950**Shipping Name:**

AEROSOLS, flammable

Class: 2.1**Packing Group:** Not applicable**Marine Pollutant:** Yes

Note: Shipper must be appropriately trained and certified before involvement with the transport of dangerous goods.

406B-A**SUPER WASH™ ELECTRONICS CLEANER****Section 15: Regulatory Information****Canada****Domestic Substance List (DSL) / Non-Domestic Substance Lists (NDSL)**

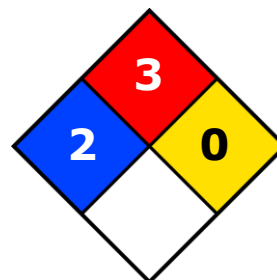
All hazardous ingredients are listed on the DSL.

Hazardous Products Act (R.S.C., 1985, c. H-3)

The safety data sheet and label comply with the Hazardous Product Act and WHMIS 2015.

USA**Other Classifications****HMIS® RATING**

HEALTH:	* 2
FLAMMABILITY:	3
PHYSICAL HAZARD:	0
PERSONAL PROTECTION:	

NFPA® 704 CODES

Approximate HMIS and NFPA Risk Ratings Legend:

0 (Low or none); 1 (Slight); 2 (Moderate); 3 (Serious); 4 (Severe)

CAA (Clean Air Act, USA)

This product does not contain any class 1 ozone depleting substances.

This product does not contain any class 2 ozone depleting substances.

This product does not contain substances that are listed as hazardous air pollutants.

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406B-A**SUPER WASH™ ELECTRONICS CLEANER****EPCRA** (Emergency Planning and Right to Know Act, USA, 40 CFR 372.45)

This product contains n-hexane (CAS# 110-54-3) which has a 5 000 lb reporting quantity requirements in section 313 Title III of the SARA of 1986 and 40 CFR part 372.

TSCA (Toxic Substances Control Act of 1976, USA)

All substances are TSCA listed.

California Proposition 65 (Chemicals known to cause cancer or reproductive toxicity, June 06, 2014 revision, USA).

This product contains n-hexane, which is listed as reproductively toxic.

Europe**RoHS** (Restriction of Hazardous Substances Directive)

This product does not contain any lead, cadmium, mercury, hexavalent chromium, PBB's, PBDE's, DEHP, BBP, DBP, or DIBP and complies with European RoHS regulations.

WEEE (Waste Electrical and Electronic Equipment Directive)

This product is not a piece of electrical or electronics equipment, and is therefore not governed by this regulation.

Section 16: Other Information

SDS Prepared by	Regulatory Department
Date of Review	13 August 2018
Supersedes	02 October 2017
Reason for Changes:	Changed propellant and concentration.

Reference

- 1) ACGIH 2017 TLVs and BEIs: Based on the documentation of the threshold limit values for chemical substances and physical agents & biological exposure indices, American Conference of Governmental of Industrial Hygienist Cincinnati, OH (2017).
- 2) All toxicological data were checked against the RTECS (Registry of Toxic Effects of Chemical Substances®)

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406B-A**SUPER WASH™ ELECTRONICS CLEANER****Abbreviations**

ACGIH	American Conference of Governmental Industrial Hygienists (USA)
ECHA	European Chemicals Agency
EU	European Union
EC50	Half maximal effective concentration
EL50	Half maximal effective loading
IARC	International Agency for Research on Cancer
NOELR	No observable effect loading ratio
NTP	National Toxicology Program
GHS	Globally Harmonized System of Classification of Labeling of Chemicals
LC50	Lethal Concentration 50%
LCLo	Lowest published lethal concentration
LD50	Lethal Dose 50%
OEL	Occupational Exposure Limit
PEL	Permissible Exposure Limit
SDS	Safety Data Sheet
STEL	Short-Term Exposure Limit
TCLo	Lowest published toxic concentration
TWA	Time Weighted Average
VOC	Volatile Organic Content

Technical Queries Contact us regarding any questions, improvement suggestions, or problems with this product. Application notes, instructions, and FAQs are located at www.mgchemicals.com.

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