NU-TROL CONTROL CLEANER **401B-AEROSOL**

Safety Data Sheet

Section 1: Product and Company Identification

Product Identifier and Other Means of Identification

Product Name: Nu-trol Control Cleaner **SDS Code:** 401B-Aerosol

Related Part #: 401B-140G, 401B-340G

Recommended Use and Restriction on Use

Use: Cleans and lubricates controls and contacts

Uses Advised Against: Do not use when the circuits are live

Details of Manufacturer or Importer

Manufacturer

MG Chemicals
1220 Corporate Drive
Burlington, Ontario L7L 5R6
CANADA

☎ 1-800-340-0772
FAX 1-800-340-0773
E-MAIL: support@mgchemicals.com
WEB www.mgchemicals.com

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

☎ 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 ☎: ***1-800-424-9300***

For emergencies involving dangerous goods; Collect 24/7
CANADA: Call CANUTEC ☎: ***1-613-996-6666*** or ****666*** on cellular phones

Section 2: Hazards Identification

Classification of Hazardous Chemical

WHMIS Classification

A – Aerosol Container; B5 – Flammable Aerosols;
D2A – Very Toxic Material (chronic toxicity);
D2B – Toxic Material (Skin Irritation)

GHS Categories

Criteria		Category	Signal Word	Pictograms
Flammable Aerosol		2	Warning	Flame
Gas under pressure	Liquefied gas	3	Warning	Gas Cylinder
Aspiration Hazard		1	Danger	Health
Reproductive Toxicity		2	Warning	Health
Skin Irritation		2A	Warning	Exclamation
Specific Target Organ Toxicity	Single Exposure	3	Warning	Exclamation
Environmental Hazard	Acute Aqua. Tox.	2	Warning	*none*
Environmental Hazard	Chronic Aqua. Tox.	3	*None*	*none*

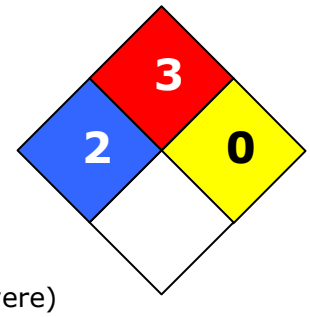
Note: The degree of severity is ranked within each hazard class from 1 (Highest Severity) to up to 5 (Lowest Severity). Severity categories do not allow comparisons between classes.

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)

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Label Elements

Signal Word	**DANGER**
Pictograms	**Hazard Statements**
	H223: Flammable aerosol
	H280: Contains gas under pressure; may explode if heated
	H315: Causes skin irritation H336: May cause drowsiness and dizziness
	H304: May be fatal if swallowed and enters airways H361: Suspected of damaging fertility or the unborn child
No Symbol Mandated	H401: Toxic to aquatic life
	Precautionary Statements *(Continued)*
Prevention	P102: Keep out of reach of children. P202: Do not handle until all safety precautions have been read and understood. P251: Do not pierce or burn, even after use. P280: Wear protective gloves/eye protection. P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking. P260 + P271: Do not breathe fume/gas/vapors/spray. Use only outdoors or in well ventilated area.

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Response	P301 + P310 + P331: IF SWALLOWED: Immediately call a POISON CENTRE/doctor. Do NOT induce vomiting. P302 + P361 + P352: IF ON SKIN: Take off immediately all contaminated clothing. Wash with plenty of water.
	Precautionary Statements
Storage	P410 + P412: Protect from sunlight. Do not expose to temperatures exceeding 50 °C [122 °F] P405: Store locked up.
Disposal	P501: Dispose of contents/container in accordance to local/regional/international regulations.

Other Hazards

Not applicable

Section 3: Hazardous Ingredients

CAS #	Chemical Name	Wt%
8042-47-5	white mineral oil (petroleum)	35–40%
811-97-2	1,1,1,2-tetrafluoroethane	20–25%
107-83-5	methyl-2-pentane	15–20%
96-14-0	methyl-3-pentane	7-10%
79-29-8	dimethyl-2,3-butane	4-7%
75-83-2	dimethyl-2,2-butane	4-7%
110-54-3	n-hexane	1-1.5%

Section 4: First Aid Measures

Exposure Condition	*GHS Code: Precautionary Statement*
IF IN EYES	P305, P351, P338, P313:
Immediate Symptoms	*irritation, redness, pain*
Response	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.
IF ON SKIN	P302, P353, P362+ P364, P313:
Immediate Symptoms	*irritation, dry skin, redness*
Response	Rinse skin with water/shower. Take off contaminated clothing and wash it before reuse.
If skin irritation persists	Get medical advice/attention.
IF INHALED	P304, P340, P312:
Immediate Symptoms	*respiratory system irritation, dizziness, drowsiness, headaches, weakness, unconsciousness*
Response	Remove person to fresh air (out of the contaminated zone) and keep comfortable for breathing.
If feeling unwell	Call a POISON CENTRE/doctor.
IF SWALLOWED	P301, P310, P331: (*Not a likely route of exposure under normal use*)
Immediate Symptoms	*respiratory system irritation, nausea, headaches, weakness, unconsciousness*
Response	Immediately call a POISON CENTER/doctor Do NOT induce vomiting.

Section 5: Fire Fighting Measures

Auto-ignition Temperature	Not Established	**Flash Point** [a]	-29 °C [-20 °F]	**LFL [LEL]** [b]	1%
				UFL [UEL]	7%

In case of fire	P370 + P378
Response	Use dry chemical, carbon dioxide, or chemical foam to extinguish. Use water spray to cool containers.
Combustion Products	Produces carbon oxides (CO, CO_2), halogenated compounds, and hydrogen fluorides
Fire-Fighter	Wear self-contained breathing apparatus for fire fighting
General Information	Vapors may accumulate in low-lying areas. Aerosol container may erupt with force at temperatures above 50 °C [122 °F]. Produces irritating and toxic fumes in fires or in contact with hot surfaces.

a) Closed cup value based on lowest value component
b) LFL = Lower Flammability [or Explosion] Limit (in volume %);
UFL = Upper Flammability [or Explosion] Limit (in volume %)

Section 6: Accidental Release Measures

Personal Protection	See Section 8. Avoid breathing the mist/vapors.
Containment	Remove all sources of ignition. Prevent spill from entering drains and waterways. Contain with inert absorbent (such as soil, sand, vermiculite).
Cleaning	Collect liquid in a sealable, solvent-resistant container. Sprinkle inert absorbent compound onto spill, then sweep into the container. Wipe up further residue with paper towel and place dirty towels in container. Wash spill area with soap and water to remove the last traces of residue. **RECOMMENDATION:** Use stainless steel or carbon steel container. Avoid using plastic containers unless they are proven to be resistant to hexane isomers.
Disposal	Dispose of spill waste according to Section 13.

Section 7: Handling and Storage

Prevention	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
	Do not spray on an open flame or other ignition source.
	Do not get in eye, on skin, or on clothing.
	Do not pierce or burn, even after use.
	Do not eat, drink, or smoke when using this product.
	Avoid breathing fume/vapors. Use only outdoors or in well ventilated area. In cases of inadequate ventilation wear respiratory protection.
Handling	Wear protective gloves/clothing/eye protection.
	Wash hands thoroughly after handling.
Storage	Protect from sunlight. Do not expose to temperatures exceeding 50 °C [122 °F]
	P405: Store locked up.

Section 8: Exposure Controls/Personal Protection

Routes of Entry

Eyes, ingestion, inhalation, and skin

Substances with Occupational Exposure Limit Values

Chemical Name	Country	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
		mg/m^3	mg/m^3
white mineral oil (petroleum)	ACGIH U.S.A. OSHA PEL Canada AB Canada BC Canada ON Canada QC	5 Not established 5 1 5 5	Not established Not established 10 Not established 10 10

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Chemical Name	Country	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
		ppm	ppm
methyl-2-pentane	ACGIH U.S.A. OSHA PEL Canada AB Canada BC Canada ON Canada QC	500 500 500 200 500 500	Not established Not established 1 000 Not established 1 000 1 000
methyl-3-pentane	ACGIH U.S.A. OSHA PEL Canada AB Canada BC Canada ON Canada QC	500 500 500 200 500 500	Not established Not established 1 000 Not established 1 000 1 000
dimethyl-2,3-pentane	ACGIH U.S.A. OSHA PEL Canada AB Canada BC Canada ON Canada QC	500 500 500 200 500 500	Not established Not established 1 000 Not established 1 000 1 000
dimethyl-2,2-pentane	ACGIH U.S.A. OSHA PEL Canada AB Canada BC Canada ON Canada QC	500 500 500 200 500 500	Not established Not established 1 000 Not established 1 000 1 000
n-hexane	ACGIH U.S.A. OSHA PEL Canada AB Canada BC Canada ON Canada QC	50 50 50 20 50 50	Not established Not established Not established Not established Not established Not established
1,1,1,2-tetrafluoroethane	*MG Chemicals* [a)]	1,000	Not established

Note: Ingredients are listed in descending weight contribution order (from greatest to least). The ACGIH[2], OSHA, and Canadian provinces exposure limits were consulted. Limits from by RTECS database[1] of the Canadian Centre for Occupational Health and Safety (CCOHS) a data from suppliers' SDS were also consulted. Short term exposure limits (STEL) are usually for 15 min and long term permissible exposure limits (PEL) for 8 h.

a) MG Chemicals recommended limit corresponding to prevalent international threshold values

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Engineering Controls

Ventilation Keep airborne concentrations below exposure limits.

Personal Protective Equipment

Eye protection Wear appropriate protective eyeglasses or chemical safety goggles.

RECOMMENDATION: Use safety glasses with lateral protection (side shields).

Skin Protection Wear appropriate protective clothing to prevent skin contact.

RECOMMENDATION: Use of protective gloves in butyl rubber, nitrile rubber, or other chemically resistant gloves.

Respiratory Protection If exposed to mist, wear respirator such as a half-mask respirator.

RECOMMENDATION: Consult your local safety supply store to ensure your respirator has filter cartridges appropriate for the ingredients listed in section 3 of this MSDS, and that the respirator is 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.

Section 9: Physical and Chemical Properties

Physical State	Liquid	**Appearance**	Colorless
Odor	Mild hydrocarbon	**Odor Threshold**	Not available
pH	Not available	**Specific Gravity**	0.73
Solubility in Water	Insoluble	**Freezing/Melting Point**	Not available
Boiling Point	52 °C [126 °F]	**Evaporation Rate**	0.8 (ButAc = 1)
Flash Point [a)]	-29 °C [-20 °F]	**Vapor Pressure @ 20 °C**	167 mmHg [22 kPa]
Lower Flammability Limit [a)]	1%	**Upper Flammability Limit** [a)]	7%
Auto-ignition Temperature	Not available	**Decomposition Temperature**	Not available
Viscosity @40 °C	<20.5 mm^2/s	**Vapor Density**	1.6 (Air =1)
Partition Coefficient	Not available		

a) Value based on hexane components
b) Estimated based on liquid components (excluding aerosol)

Section 10: Stability and Reactivity

Stabilities	Chemically stable at normal temperatures and pressures
Conditions to Avoid	Ignition sources, temperatures above 50 °C [122 °F]), and incompatible substances.
Incompatibilities	Strong oxidizing agents, alkali or alkali earth metals, powdered aluminum, zinc, magnesium, and beryllium
Polymerization	Will not occur
Decomposition	Will not decompose under normal conditions. For thermal decomposition, see combustion products in Section 5

Section 11: Toxicological Information

Routes of Exposure

Eyes, ingestion, inhalation, and skin

Symptom Summary for Exposure Routes

Eyes	May cause eye redness or pain.
Skin	Cause mild to moderate skin irritation.
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	Ingestion or inhalation of material, mist, or vapor during pregnancy increases the chances fetal death and developmental defects.

Acute Toxicity (Lethal Exposure Concentrations)

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation	TCLo inhalation [a)]
white mineral oil (petroleum)	>5 000 mg/kg Rat	Not available	Not available	1000 mg/m^3 4w Rat [b)]
methyl-2-pentane	Not available	Not available	3 125 ppm 4 h Rat [c)]	Not available
1,1,1,2-tetrafluoroethane	Not available	Not available	Not available	Not available
methyl-3-pentane	Not available	Not available	Not available	Not available
dimethyl-2,3-butane	Not available	Not available	Not available	Not available
dimethyl-2,2-butane	Not available	Not available	Not available	Not available
n-hexane	15 480 mg/kg Rat	>1.3 g/kg Rabbit [c)]	627 000 ppm 3 min Rat	5 400 mg/m^3 10 min Human

Note: Representative toxicity data from by RTECS database of the Canadian Centre for Occupational Health and Safety (CCOHS)[1] data from supplier MSDS were also consulted.
a) Lowest published lethal toxic dose
b) Intermittent
c) Data from supplier MSDS

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Skin corrosion/irritation	Skin irritant
Serious eye damage/irritation	No data available
Sensitization (allergic reactions)	No data available
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)	No data available
Reproductive Toxicity (risk to sex functions)	No data available
Teratogenicity (risk of fetus malformation)	Harm to fetus found in animal studies for n-hexane component.
STOT-single exposure	Inhalation of hexane isomers may affect the central nervous system
STOT-repeated exposure	No data available
Aspiration hazard	Mixture is a class 1 aspiration hazard. It contain over 37% class 1 aspiration hazard components and has a mixture viscosity of <20.5 mm^2/s at 40 °C.

Section 12: Ecological Information

The ecotoxicity of the mixture was estimated by the calculation method using the summation of classified ingredients. The IMDG Code criteria and the raw-material MSDS along with supporting data for the classification of registered substances from the European Chemical Agency database (http://echa.europa.eu) were used.

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

Category 2

GHS Code: Hazard Statement

H401: Toxic to aquatic life

P273: Avoid release to the environment

P391: Collect spillage

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Chronic Ecotoxicity

Similar mixtures of isoalkanes C6-C7 with <5% n-hexane suggest a EC50 >2 mg/L for fish using a QSAR model. For water flea (Daphnia magna) a NOELR 21 days of 1 mg/L and an EL50 of 1.6 mg/L.

Category 3

GHS Code: Hazard Statement

H412: Harmful to aquatic life with long lasting effects

Biodegradability

The isoalkane components have low vapor pressure and are only slightly soluble, so they will volatilize rapidly from surface water. Isolkanes are expected to be rapidly biodegrade aerobically and atmospherically.

Other Effects

Regulated Volatile Organic Content (VOC) = 75% (495 g/L)

Section 13: Disposal Information

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

Section 14: Transport Information

Ground

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

Limited Quantity 	

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Air

Refer to ICAO-IATA Dangerous Goods Regulations.	
30 kg Gross and under **Limited Quantity** 	Over 30 kg Gross **UN number**: UN1950 **Shipping Name:** AEROSOL, flammable **Class:** 2.1 **Packing Group**: Not applicable **Marine Pollutant:** No 

Sea

Refer to IMDG regulations.	
1000 mL and under **Limited Quantity** 	Sizes over 1 L are not manufactured by MG **UN number**: UN1950 **Shipping Name:** AEROSOL, flammable **Class:** 2.1 **Packing Group**: Not applicable **Marine Pollutant:** No 

Note: **Shipper must be appropriately <u>trained and certified</u> before involvement with the transport of dangerous goods.**

Section 15: Regulatory Information

Canada

Domestic Substance List (DSL) / Non-Domestic Substance Lists (NDSL)

All hazardous ingredients are listed on the DSL/NDSL.

Industry and Science Canada

MG Labels products intended for the workplace to conform to WHMIS labeling regulations. Product identification, net quantity declaration, minimum printing type size heights, and packaging of this product are in compliance.

Health Canada

Products produced by MG Chemicals intended for retail display conform to the Canadian Consumer Labeling Regulations.

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USA

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 any substances that are listed as hazardous air pollutants.

EPCRA (Emergency Planning and Right to Know Act, USA, 40 CFR 372.45

This product contains ≤1.3% 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, USA).

This product does not contain any of the listed substances.

Europe

RoHS

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

WEEE

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 Michel Hachey

Date of Issue 13 December 2013

Supersedes 16 October 2013

Reason for Changes: Change to GHS classification and format

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References

1) All toxicological data were checked against the RTECS (Registry of Toxic Effects of Chemical Substances®)

2) ACGIH *2013 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 (2013).

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists (USA)
EC50	Half maximal effective concentration
EL50	Half maximal effective loading
MG	MG Chemicals
NOELR	No observable effect loading ratio
GHS	Globally Harmonized System of Classification of Labeling of Chemicals
LC50	Lethal Concentration 50%
LCLo	Lowest published lethal concentration
LD50	Lethal Dose 50%
PEL	Permissible Exposure Limit
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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