



WHITMAN COLLEGE

Chemical Hazard Communication

Safety Data Sheets

SDS

History of the SDS

Earliest written materials found in tombs of the Egyptians

Information was for 'prescriptions' used by early physicians and included a description of the material, the source, names, preparation, storage and application procedures and warnings about improper use and application



History of the SDS

1940's –
Manufacturing
Chemists' Association
began producing
“Chemical Safety Data
Sheets” containing
“Properties and
Essential Information
for Safe Handling and
Use” of some of the
more important
hazardous chemicals
used in commerce.



History of the SDS

- November 25, 1983 OSHA published the Hazard Communication Standard as 29 CFR Part 1910.
- 1985 standard requiring chemical manufacturers and distributors to provide MSDSs to customers went into effect.
- No particular format was required.
- 1987 Standard was extended to include “all employers with employees exposed to hazardous chemicals in their workplace”

History of the SDS

- 1986 - EPA published the “Emergency Planning and Community Right-to-Know Act”
- 1988 - “Toxic Chemical Release Reporting: Community Right-To-Know”

History of the SDS

2012 - Globally Harmonized System (GHS)

- Creating classification processes that use available data on chemicals for comparison with the defined hazard criteria
- Communicating hazard information, as well as protective measures, on labels and **Safety Data Sheets** (SDS)
- Logical and comprehensive approach to: Defining health, physical and environmental hazards of chemicals

Minimum Information in SDS

1. Identification of the substance or mixture and of the supplier	<ul style="list-style-type: none">• GHS product identifier.• Other means of identification.• Recommended use of the chemical and restrictions on use.• Supplier's details (including name, address, phone number, etc.).• Emergency phone number.
2. Hazards identification	<ul style="list-style-type: none">• GHS classification of the substance/mixture and any national or regional information.• GHS label elements, including precautionary statements. (Hazard symbols may be provided as a graphical reproduction of the symbols in black and white or the name of the symbol, e.g., flame, skull and crossbones.)• Other hazards which do not result in classification (e.g., dust explosion hazard) or are not covered by the GHS.

Minimum Information in SDS

3.	Composition/information on ingredients	Substance <ul style="list-style-type: none">• Chemical identity.• Common name, synonyms, etc.• CAS number, EC number, etc.• Impurities and stabilizing additives which are themselves classified and which contribute to the classification of the substance. Mixture <ul style="list-style-type: none">• The chemical identity and concentration or concentration ranges of all ingredients which are hazardous within the meaning of the GHS and are present above their cutoff levels. NOTE: For information on ingredients, the competent authority rules for CBI take priority over the rules for product identification.
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Minimum Information in SDS

4.	First aid measures	<ul style="list-style-type: none">• Description of necessary measures, subdivided according to the different routes of exposure, i.e., inhalation, skin and eye contact, and ingestion.• Most important symptoms/effects, acute and delayed.• Indication of immediate medical attention and special treatment needed, if necessary.
5.	Firefighting measures	<ul style="list-style-type: none">• Suitable (and unsuitable) extinguishing media.• Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products).• Special protective equipment and precautions for firefighters.

Minimum Information on SDS

6	Accidental release measures	<ul style="list-style-type: none">• Personal precautions, protective equipment and emergency procedures.• Environmental precautions.• Methods and materials for containment and cleaning up.
7	Handling and storage	<ul style="list-style-type: none">• Precautions for safe handling.• Conditions for safe storage, including any incompatibilities.
8	Exposure controls/personal protection.	<ul style="list-style-type: none">• Control parameters, e.g., occupational exposure limit values or biological limit values.• Appropriate engineering controls.• Individual protection measures, such as personal protective equipment.

Minimum Information on SDS

<p>9. Physical and chemical properties</p>	<ul style="list-style-type: none">• Appearance (physical state, color, etc.).• Odor.• Odor threshold.• pH.• melting point/freezing point.• initial boiling point and boiling range.• flash point.• evaporation rate.• flammability (solid, gas).• upper/lower flammability or explosive limits.• vapor pressure.• vapor density.• relative density.• solubility(ies).• partition coefficient: n-octanol/water.• auto ignition temperature.• decomposition temperature.
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Minimum Information on SDS

10.	Stability and reactivity	<ul style="list-style-type: none">•Chemical stability.•Possibility of hazardous reactions.•Conditions to avoid (e.g., static discharge, shock or vibration).•Incompatible materials.•Hazardous decomposition products.
11.	Toxicological information	<ul style="list-style-type: none">•Concise but complete and comprehensible description of the various toxicological (health) effects and the available data used to identify those effects, including: information on the likely routes of exposure (inhalation, ingestion, skin and eye contact);•Symptoms related to the physical, chemical and toxicological characteristics;•Delayed and immediate effects and also chronic effects from short- and long-term exposure;•Numerical measures of toxicity (such as acute toxicity estimates).

Minimum Information on SDS

12.	Ecological information	<ul style="list-style-type: none">•Eco toxicity (aquatic and terrestrial, where available).•Persistence and degradability.•Bio accumulative potential.•Mobility in soil.•Other adverse effects.
13.	Disposal considerations	<ul style="list-style-type: none">•Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging.

Minimum Information on SDS

14.	Transport information	<ul style="list-style-type: none">•UN Number.•UN Proper shipping name.•Transport Hazard class(es).•Packing group, if applicable.•Marine pollutant (Yes/No).•Special precautions which a user needs to be aware of or needs to comply with in connection with transport or conveyance either within or outside their premises.
15.	Regulatory information	<ul style="list-style-type: none">•Safety, health and environmental regulations specific for the product in question.
16.	Other information including information on preparation and revision of the SDS	

GHS Symbols



Explosion



Flame



Flame over circle



Gas cylinder



Corrosion



Skull and crossbones



Exclamation mark



Danger to health



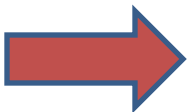
Environment

Why Are SDSs Important to ME?

- It could save your life
- You deserve to know all the facts



VIREX Tb READY-TO-USE DISINFECTANT CLEANER



National Fire Protection Association (NFPA)	Fire Hazard	Hazardous Material Information System (HMIS)	Health	1
	Health		Fire Hazard	0
	Reactivity		Reactivity	0
Specific Hazard				
Protective Clothing	None required.	Emergency Overview	Clear Liquid. See Section 9. CAUTION: Causes moderate eye irritation.	

Section 1. Chemical Product and Company Identification

Product Name	VIREX Tb READY-TO-USE DISINFECTANT CLEANER	Code	4743
Product Use	Industrial/Institutional: Disinfectant.	PMS#	3105895
MSDS#	126650001	Validation Date	9/11/2003
U.S. Headquarters	JohnsonDiversey, Inc. 8310 16th Street Sturtevant, Wisconsin 53177-0902 Phone: (888) 352-2249 MSDS Internet Address: www.johnsondiversey.com	Canadian Headquarters	JohnsonDiversey - Canada, Inc. 2401 Bristol Circle Oakville, Ontario L6H 6P1 Phone: 1-888-746-5971
		Print Date	9/11/2003
		Supersedes	4/15/2003
		In Case of Emergency	(800) 851-7145

Section 2. Composition and Information on Ingredients

Ingredients	CAS #	% by Weight	Exposure Limits	LC50/LD50
n-Alkyl Dimethyl Benzyl Ammonium Chlorides	68391-01-5	0.105	Not available.	Not available.
n-Alkyl Dimethyl Ethylbenzyl Ammonium Chlorides	68956-79-6	0.105	Not available.	Not available.
Diethylene Glycol Butyl Ether	112-34-5	5-10	Not available.	ORAL (LD50): Acute: 5660 mg/kg [Rat]. DERMAL (LD50): Acute: 2700 mg/kg [Rabbit].

Section 3. Hazards Identification

Routes of Entry	Inhalation. Skin contact. Eye contact.
Potential Acute Health Effects	<p><i>Eyes</i> Causes moderate eye irritation.</p> <p><i>Skin</i> May be mildly irritating to skin.</p> <p><i>Inhalation</i> None known.</p> <p><i>Ingestion</i> None known.</p>
Medical Conditions	None known.
Aggravated by Overexposure:	
See Toxicological Information (section 11)	

Section 4. First Aid Measures

Eye Contact	Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Get medical attention.
Skin Contact	Take off contaminated clothing. Flush immediately with plenty of water for at least 15 minutes. Get medical attention.
Inhalation	No specific first aid measures are required.
Ingestion	No specific first aid measures are required.
Notes to Physician	No special measures required.



Section 5. Fire Fighting Measures

Flammability of the Product	None known.
Flash Points	Closed cup: >93.333°C (200°F).
Products of Combustion	None known.
Fire Fighting Media and Instructions	Extinguish with water spray or carbon dioxide, dry chemical powder or appropriate foam. Normal fire fighting procedure may be used.
Special Remarks on Fire and Explosion Hazards	None known.

Section 6. Accidental Release Measures

Personal Precautions	Put on appropriate personal protective equipment (see Section 8.).
Environmental Precautions and Clean-up Methods	In the event of major spillage: Use appropriate containment to avoid environmental contamination. Sweep or scrape up material. Place in suitable clean, dry containers for disposal by approved methods. Use a water rinse for final clean-up.

Section 7. Handling and Storage

Handling	Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. FOR COMMERCIAL AND INDUSTRIAL USE ONLY.
Storage	Store in a dry, cool and well-ventilated area. Protect from freezing. KEEP OUT OF REACH OF CHILDREN.

Section 8. Exposure Controls/Personal Protection

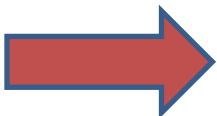
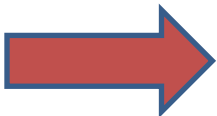
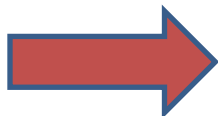
Engineering Controls	No special ventilation requirements. General room ventilation is adequate.
Personal Protection	
<i>Eyes</i>	No special requirements under normal use conditions.
<i>Hands</i>	No special requirements under normal use conditions.
<i>Respiratory</i>	No special requirements under normal use conditions.
<i>Feet</i>	No special requirements under normal use conditions.
<i>Body</i>	No special protective clothing is required.

Section 9. Physical and Chemical Properties

Physical State and Appearance	Liquid.
Odor	Lemon like.
Color	Clear
pH	11.5 to 11.9 [Basic.]
Specific Gravity	1
Boiling/Condensation Point	>93.333°C (200°F)
Melting/Freezing Point	<0°C (32°F)
Solubility in water	Complete.

Section 10. Stability and Reactivity

Stability and Reactivity	_____
Conditions of Instability	_____
Incompatibility with Various Substances	_____
Hazardous Decomposition Products	_____
Hazardous Polymerization	_____




Section 11. Toxicological Information	
Acute toxicity	ORAL (LD50) Greater than 5000 mg/kg (rat). DERMAL (LD50) Greater than 5000 mg/kg (rat).
Effects of Chronic Exposure	None known.
Other Toxic Effects	Not available.

Section 12. Ecological Information
Not available.

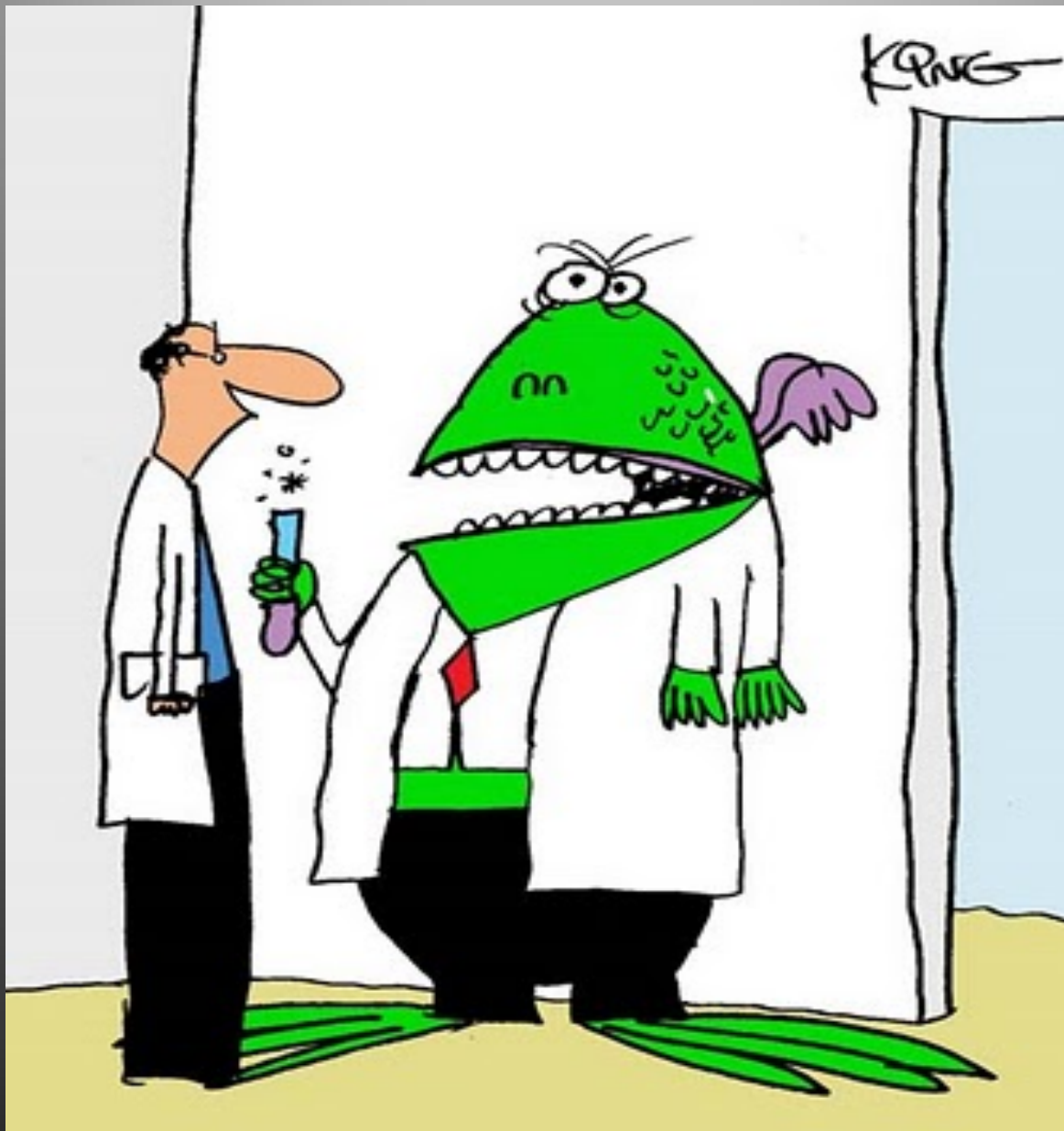
Section 13. Disposal Considerations	
Waste Information	PESTICIDAL WASTE - Observe all applicable Federal/Provincial/State regulations and Local/Municipal ordinances regarding disposal of pesticide wastes.

Section 14. Transport Information	
DOT Classification	
DOT Proper Shipping Name	Please refer to the Bill of Lading/receiving documents for up to date shipping information.
TDG Classification	
TDG Proper Shipping Name	Please refer to the Bill of Lading/receiving documents for up to date shipping information.

Section 15. Regulatory Information	
Reporting in this section is based on ingredients disclosed in Section 2	
US Regulations	
Federal CERCLA: Hazardous substances.: Diethylene Glycol Butyl Ether	
State New Jersey spill list: Diethylene Glycol Butyl Ether New Jersey: Diethylene Glycol Butyl Ether Pennsylvania RTK: Diethylene Glycol Butyl Ether	
This product is not subject to the reporting requirements under California's Proposition 65.	
Registered Product Information	EPA Registration Number: 70627-2
Canadian Regulations	
WHMIS Classification	Not controlled under WHMIS (Canada). Exempt
WHMIS Icon	
Registered Product Information	Not applicable.
Chemical Inventory Status	

Section 16. Other Information

Other Special	MSDS Serial Range: 1-2
Considerations	
Version	2.02
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SDS? No, I didn't look at it before I started. Why do you ask?

QUESTIONS?