Safety Data Sheet
acc. to OSHA HCS

Printing date 03/30/2015 *Reviewed on 03/23/2015*

1 Identification

· ***Product identifier***

· ***Product name:*** **V23 Wear Metal Standards - 500ug/g in Hydrocarbon Oil**

· ***Part number:*** *VHG-V23-500-100G*
· ***Application of the substance / the mixture*** *Reference material for laboratory use only*
· ***Manufacturer/Supplier:***
VHG Labs, Inc *Tel :+1 (603) 622-7660*
LGC Standards *Fax : +1 (603) 622-5180*
276 Abby Road
Manchester, NH 03103 *eMail : custsvc@vhglabs.com*
UNITED STATES OF AMERICA *Web : www.vhglabs.com*
ChromaDex, Inc. *Phone: +1 (949) 419-0288*
10005 Muirlands Blvd., Suite G
Irvine, CA 92618 USA *email: customerservice@ChromaDex.com*

· ***Information department:***
Product safety department
eMail : sds-request@lgcgroup.com
SDS@ChromaDex.com
· ***Emergency telephone number:***
800-424-9300 Chemtrec (24 hrs)
+1 (949) 419-0288

2 Hazard(s) identification

· ***Classification of the substance or mixture***



GHS08 Health hazard

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



GHS07

Skin Sens. 1 H317 May cause an allergic skin reaction.

· ***Label elements***
· ***GHS label elements***
The product is classified and labeled according to the Globally Harmonized System (GHS).
· ***Hazard pictograms***



GHS07 GHS08

· ***Signal word*** *Danger*

· ***Hazard-determining components of labeling:***
White mineral oil
Organo Nickel Compound
· ***Hazard statements***
H317 May cause an allergic skin reaction.
H304 May be fatal if swallowed and enters airways.
· ***Precautionary statements***
P261 Avoid breathing dust/fume/gas/mist/vapors/spray
P280 Wear protective gloves.

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/30/2015 *Reviewed on 03/23/2015*

Product name: **V23 Wear Metal Standards - 500ug/g in Hydrocarbon Oil**

(Contd. of page 1)

P301+P310 If swallowed: Immediately call a poison center/doctor.
P321 Specific treatment (see on this label).
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· ***Classification system:***
· ***NFPA ratings (scale 0 - 4)***



Health = 0
Fire = 1
Reactivity = 0

· ***HMIS-ratings (scale 0 - 4)***



Health = 0
Fire = 1
Reactivity = 0

· ***Other hazards***
· ***Results of PBT and vPvB assessment***
· ***PBT:*** *Not applicable.*
· ***vPvB:*** *Not applicable.*

3 Composition/information on ingredients

· ***Chemical characterization: Mixtures***
· ***Description:*** *Also contains substances at levels not considered to be hazardous.*

· ***Dangerous components:***		
CAS: 8042-47-5 *RTECS: PY8047000*	*White mineral oil* *Asp. Tox. 1, H304*	*> 95%*
RTECS: -	*Organo Nickel Compound* *Resp. Sens. 1, H334; Muta. 2, H341; Carc. 1A, H350; Repr. 1B, H360; STOT RE 1, H372; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Skin Sens. 1, H317*	*< 0.1%*

4 First-aid measures

· ***Description of first aid measures***
· ***After inhalation:***
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
· ***After skin contact:*** *Immediately wash with water and soap and rinse thoroughly.*
· ***After eye contact:*** *Rinse opened eye for several minutes under running water.*
· ***After swallowing:***
Rinse mouth. Do not induce vomiting.
Seek immediate medical advice.
· ***Information for doctor:***
· ***Most important symptoms and effects, both acute and delayed*** *No further relevant information available.*
· ***Indication of any immediate medical attention and special treatment needed***
No further relevant information available.

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/30/2015 *Reviewed on 03/23/2015*

Product name: **V23 Wear Metal Standards - 500ug/g in Hydrocarbon Oil**

(Contd. of page 2)

5 Fire-fighting measures

· ***Extinguishing media***
· ***Suitable extinguishing agents:*** *Use fire fighting measures that suit the environment.*
· ***Special hazards arising from the substance or mixture***
Formation of toxic gases is possible during heating or in case of fire.
· ***Advice for firefighters***
· ***Protective equipment:*** *Wear self-contained respiratory protective device.*

6 Accidental release measures

· ***Personal precautions, protective equipment and emergency procedures*** *Wear protective clothing.*
· ***Environmental precautions:*** *Do not allow to enter sewers/ surface or ground water.*
· ***Methods and material for containment and cleaning up:***
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· ***Reference to other sections***
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· ***Handling:***
· ***Precautions for safe handling***
Ensure good ventilation/exhaustion at the workplace.
Store in cool, dry place in tightly closed receptacles.
Prevent formation of aerosols.
· ***Information about protection against explosions and fires:*** *No special measures required.*

· ***Conditions for safe storage, including any incompatibilities***
· ***Storage:***
· ***Requirements to be met by storerooms and receptacles:***
Store in a cool location.
Please refer to the manufacturers certificate for specific storage and transport temperature conditions.
Store only in the original receptacle.
Keep container in a well-ventilated place. Keep away from sources of ignition and heat.
· ***Information about storage in one common storage facility:*** *Store away from foodstuffs.*
· ***Further information about storage conditions:*** *None.*
· ***Specific end use(s)*** *No further relevant information available.*

8 Exposure controls/personal protection

· ***Additional information about design of technical systems:*** *No further data; see item 7.*

· ***Control parameters***
· ***Components with limit values that require monitoring at the workplace:***
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
· ***Additional information:*** *The lists that were valid during the creation were used as basis.*

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/30/2015 *Reviewed on 03/23/2015*

Product name: **V23 Wear Metal Standards - 500ug/g in Hydrocarbon Oil**

(Contd. of page 3)

· ***Exposure controls***
· ***Personal protective equipment:***
· ***General protective and hygienic measures:***
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
· ***Breathing equipment:***
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· ***Protection of hands:***



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374
· ***Material of gloves*** *Nitrile rubber, NBR*
· ***Penetration time of glove material***
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· ***Eye protection:*** *Safety glasses*

9 Physical and chemical properties

· ***Information on basic physical and chemical properties***	
· ***General Information***	
· ***Appearance:***	
Form:	*Oily*
Color:	*Brown*
· ***Odor:***	*Mineral-oil-like*
· ***Odour threshold:***	*Not determined.*
· ***pH-value:***	*Not determined.*
· ***Change in condition***	
Melting point/Melting range:	*Not determined.*
Boiling point/Boiling range:	*218 °C (424 °F)*
· ***Flash point:***	*115 °C (239 °F)*
· ***Flammability (solid, gaseous):***	*Not determined.*
· ***Ignition temperature:***	
Decomposition temperature:	*Not determined.*
· ***Auto igniting:***	*Product is not selfigniting.*
· ***Danger of explosion:***	*Not determined.*
· ***Explosion limits:***	
Lower:	*Not determined.*
Upper:	*Not determined.*

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/30/2015 *Reviewed on 03/23/2015*

Product name: **V23 Wear Metal Standards - 500ug/g in Hydrocarbon Oil**

(Contd. of page 4)

· ***Vapor pressure:***	*Not determined.*
· ***Density at 20 °C (68 °F):***	*0.862 g/cm³ (7.193 lbs/gal)*
· ***Relative density***	*Not determined.*
· ***Vapour density***	*Not determined.*
· ***Evaporation rate***	*Not determined.*
· ***Solubility in / Miscibility with Water:***	*Not miscible or difficult to mix.*
· ***Partition coefficient (n-octanol/water):***	*Not determined.*
· ***Viscosity:***	
Dynamic:	*Not determined.*
Kinematic:	*Not determined.*
· ***Other information***	*No further relevant information available.*

10 Stability and reactivity

· ***Reactivity*** *Stable under normal conditions.*
· ***Chemical stability*** *Stable under normal conditions.*
· ***Thermal decomposition / conditions to be avoided:***
Formation of toxic gases is possible during heating or in case of fire.
· ***Possibility of hazardous reactions*** *No dangerous reactions known.*
· ***Conditions to avoid*** *Heat.*
· ***Incompatible materials:*** *Strong oxidizing agents.*
· ***Hazardous decomposition products:*** *Formation of toxic gases is possible during heating or in case of fire.*

11 Toxicological information

· ***Information on toxicological effects*** *May be fatal if swallowed and enters airways.*
· ***Acute toxicity:***

· ***LD/LC50 values that are relevant for classification:***		
8042-47-5 White mineral oil		
Oral	*LD50*	*> 5000 mg/kg (rat)*

· ***Primary irritant effect:***
· ***on the skin:*** *May cause an allergic skin reaction.*
· ***on the eye:*** *No irritating effect.*
· ***Sensitization:*** *Sensitization possible through skin contact.*
· ***Additional toxicological information:***
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

· ***Carcinogenic categories***

· ***IARC (International Agency for Research on Cancer)***	
Organo Chromium Compound	*3*
Organo Cadmium Compound	*1*
Organo Nickel Compound	*1*
Organo Lead Compound	*2B*

· ***NTP (National Toxicology Program)***	
Organo Lead Compound	*R*

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/30/2015 *Reviewed on 03/23/2015*

Product name: **V23 Wear Metal Standards - 500ug/g in Hydrocarbon Oil**

(Contd. of page 5)

· ***OSHA-Ca (Occupational Safety & Health Administration)***

None of the ingredients is listed.

12 Ecological information

· ***Toxicity***
· ***Aquatic toxicity:*** *No further relevant information available.*
· ***Persistence and degradability*** *No further relevant information available.*
· ***Behavior in environmental systems:***
· ***Bioaccumulative potential*** *No further relevant information available.*
· ***Mobility in soil*** *No further relevant information available.*
· ***Additional ecological information:***
· ***General notes:***
Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
· ***Results of PBT and vPvB assessment***
· ***PBT:*** *Not applicable.*
· ***vPvB:*** *Not applicable.*
· ***Other adverse effects*** *No further relevant information available.*

13 Disposal considerations

· ***Waste treatment methods***
· ***Recommendation:***
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· ***Uncleaned packagings:***
· ***Recommendation:*** *Dispose in accordance with national regulations.*

14 Transport information

· ***UN-Number***	
· ***DOT, ADR, ADN, IMDG, IATA***	*Not applicable*
· ***DOT, ADR, ADN, IMDG, IATA***	*Not applicable*
· ***Transport hazard class(es)***	
· ***DOT, ADR, ADN, IMDG, IATA***	
· ***Class***	*Not applicable*
· ***Packing group***	
· ***DOT, ADR, IMDG, IATA***	*Not applicable*
· ***Environmental hazards:***	
· ***Marine pollutant:***	*No*
· ***Special precautions for user***	*Not applicable.*
· ***Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code***	*Not applicable.*
· ***UN "Model Regulation":***	-

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(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/30/2015 *Reviewed on 03/23/2015*

Product name: **V23 Wear Metal Standards - 500ug/g in Hydrocarbon Oil**

(Contd. of page 6)

15 Regulatory information

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

· ***Section 355 (extremely hazardous substances):***
None of the ingredients is listed.

· ***Section 313 (Specific toxic chemical listings):***
Organo Silver Compound
Organo Aluminium Compound
Organo Chromium Compound
Organo Copper Compound
Organo Lead Compound
Organo Vanadium Compound
Organo Zinc Compund

· ***TSCA (Toxic Substances Control Act):***	
8042-47-5	*White mineral oil*
	Organo Silver Compound
	Organo Aluminium Compound
	Organo Boron Compound
	Organo Chromium Compound
	Organo Copper Compound
	Organo Iron Compound
	Organo Molybdenum Compound
	Organo Nickel Compound
	Organo Lead Compound
	Organo Silicon Compound
	Organo Vanadium Compound
	Organo Zinc Compund

· ***Proposition 65***

· ***Chemicals known to cause cancer:***
Organo Cadmium Compound
Organo Lead Compound

· ***Chemicals known to cause reproductive toxicity for females:***
Organo Lead Compound

· ***Chemicals known to cause reproductive toxicity for males:***
Organo Lead Compound

· ***Chemicals known to cause developmental toxicity:***
Organo Lead Compound

· ***Carcinogenic categories***

· ***EPA (Environmental Protection Agency)***	
Organo Silver Compound	*D*
Organo Boron Compound	*I*
Organo Chromium Compound	*D*
Organo Copper Compound	*D*

(Contd. on page 8)

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/30/2015 *Reviewed on 03/23/2015*

Product name: **V23 Wear Metal Standards - 500ug/g in Hydrocarbon Oil**

(Contd. of page 7)

Organo Lead Compound	*B2*
Organo Zinc Compund	*II*

· ***TLV (Threshold Limit Value established by ACGIH)***

Organo Aluminium Compound	*A4*
Organo Chromium Compound	*A4*
Organo Molybdenum Compound	*A3*
Organo Lead Compound	*A3*

· ***NIOSH-Ca (National Institute for Occupational Safety and Health)***

None of the ingredients is listed.

· ***GHS label elements***
The product is classified and labeled according to the Globally Harmonized System (GHS).
· ***Hazard pictograms***



GHS07 GHS08

· ***Signal word*** *Danger*

· ***Hazard-determining components of labeling:***
White mineral oil
Organo Nickel Compound
· ***Hazard statements***
H317 May cause an allergic skin reaction.
H304 May be fatal if swallowed and enters airways.
· ***Precautionary statements***
P261 Avoid breathing dust/fume/gas/mist/vapors/spray
P280 Wear protective gloves.
P301+P310 If swallowed: Immediately call a poison center/doctor.
P321 Specific treatment (see on this label).
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
· ***Chemical safety assessment:*** *A Chemical Safety Assessment has not been carried out.*

16 Other information

The information in this Safety Data Sheet meets the requirements of the United States OCCUPATIONAL SAFETY AND HEALTH ACT and regulations promulgated thereunder (29 CFR 1910.1200 et. seq.) This document is intended only as a guide to the appropriate precautionary handling of the material by a person trained in, or supervised by a person trained in, chemical handling. The user is responsible for determining the application. Depending on usage, protective clothing including eye and face guards and respirators must be used to avoid contact with material or breathing chemical vapors/fumes. Exposure to this product may have serious adverse health effects. This chemical may interact with other substances. Since the potential uses are so varied, we cannot warn of all of the potential dangers of use or interaction with other chemicals or materials. We warrant that the chemical meets the specifications set forth on the label. We (ChromaDex Inc.) disclaim any other warranties, expressed or implied with regard to the product supplied hereunder, its merchantability or its fitness for a particular purpose. Read all precautionary information.
The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

· ***Date of preparation / last revision*** *03/30/2015 / 1*

(Contd. on page 9)

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/30/2015 *Reviewed on 03/23/2015*

Product name: **V23 Wear Metal Standards - 500ug/g in Hydrocarbon Oil**

(Contd. of page 8)

· ***Abbreviations and acronyms:***
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1
Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
Muta. 2: Germ cell mutagenicity, Hazard Category 2
Carc. 1A: Carcinogenicity, Hazard Category 1A
Repr. 1B: Reproductive toxicity, Hazard Category 1B
STOT RE 1: Specific target organ toxicity - Repeated exposure, Hazard Category 1
Asp. Tox. 1: Aspiration hazard, Hazard Category 1
Aquatic Acute 1: Hazardous to the aquatic environment - AcuteHazard, Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - Chronic Hazard, Category 1

· ***Sources***
Tables 3.1 and 3.2 from Annex 6 of EC 1272/2008, EC 1907/2006, EH40/2005 as amended 2011, Registry of Toxic Effects of Chemical Substances (RTECS), The Dictionary of Substances and their Effects, 1st Edition, IUCLID.