1 Identification

- **Product identifier**
  - **Trade name:** V-21+K in hydrocarbon oil @10ug/g
  - **Article number:** VHG-V21+K-10-100G
- **Application of the substance / the preparation** 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
  - UNITED STATES OF AMERICA
  - eMail: custsvc@vhglabs.com
  - Web: www.vhglabs.com
- **Information department:**
  - Product safety department
  - eMail: sds-request@lgcstandards.com
- **Emergency telephone number:** 800-424-9300 Chemtrec (24 hrs)

2 Hazard(s) identification

- **Classification of the substance or mixture**
  - GHS08 Health hazard
    - H304 May be fatal if swallowed and enters airways.
  - GHS07
    - 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/vapours/spray.
  - P280 Wear protective gloves/protective clothing/eye protection/face protection.
  - P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
  - P321 Specific treatment (see on this label).
  - P405 Store locked up.
  - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 2)
Trade name: V-21+K in hydrocarbon oil @10ug/g

- 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 | White mineral oil | > 95% |
| RTECS: PY8047000 | H304 | |
| RTECS: - | Organo Nickel Compound | < 0.1% |
| H334; H341; H350; H360; H372; H400; H410; H317 |

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.
- 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.

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).
  - 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 manufacturer's 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.
- **Exposure controls**
- **Personal protective equipment**:
  - **General protective and hygienic measures**:
    - 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
Trade name: V-21+K in hydrocarbon oil @10ug/g

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation /
the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the
deradation
- Material of gloves
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality
and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the
resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the
application.
- 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:
      - Odor 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.
  - 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.
Trade name: V-21+K in hydrocarbon oil @10ug/g

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
  - Acute toxicity:
  - Primary irritant effect:
    - on the skin: No irritant effect.
    - 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

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 2 (Self-assessment): hazardous for water
    Do not allow product to reach ground water, water course or sewage system.
    Danger to drinking water if even small quantities leak into the ground.
  - Results of PBT and vPvB assessment
    - PBT: Not applicable.
Trade name: V-21+K in hydrocarbon oil @10ug/g

- 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: Not applicable
  - 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": -

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 Compound

- TSCA (Toxic Substances Control Act):
  - 8042-47-5 White mineral oil
Trade name: V-21+K in hydrocarbon oil @10ug/g

- **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
    - Organo-Lead Compound: B2
    - Organo Zinc Compound: H
  - **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.

- **OSHA-Ca (Occupational Safety & Health Administration)**
  - None of the ingredients is listed.

- **GHS label elements**
  - The product is classified and labeled according to the Globally Harmonized System (GHS).
Trade name: V-21+K in hydrocarbon oil @10ug/g

- **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/vapours/spray.
  - P280 Wear protective gloves/protective clothing/eye protection/face protection.
  - P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
  - 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.

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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 (LGC/VHG/ARMI) disclaim any other warranties, expressed or implied with regard to the product supplied hereunder, its merchantability or its fitness for a particular purpose. The user should recognize that this product can cause severe injury and even death, especially if improperly handled or the known dangers of use are not heeded. Read all precautionary information.

- **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)

- **Sources**