1 Identification

- **Product identifier**
  - Trade name: **MILBOND PRIMER KIT**
  - Article number: S12800(Pt.A), S12802
  - Application of the substance / the mixture Laboratory chemicals

- **Details of the supplier of the safety data sheet**
  - Manufacturer/Supplier:
    Electron Microscopy Sciences
    1560 Industry Road
    USA-Hatfield, PA 19440
    Tel: 215-412-8400  Fax: 215-412-8450
    email: sgkck@aol.com
    www.emsdiasum.com
  - Information department: Product safety department
  - Emergency telephone number:
    ChemTrec 1-800-424-9300 Contract CCN7661
    1-703-527-3887

2 Hazard(s) identification

- **Classification of the substance or mixture**
  - GHS02 Flame
    Flam. Liq. 2  H225  Highly flammable liquid and vapor.
  - GHS08 Health hazard
    Carc. 1A  H350  May cause cancer.
  - GHS07
    Acute Tox. 4  H302  Harmful if swallowed.
    Eye Irrit. 2A  H319  Causes serious eye irritation.
    STOT SE 3  H336  May cause drowsiness or dizziness.

- **Label elements**
  - GHS label elements: The product is classified and labeled according to the Globally Harmonized System (GHS).
  - Hazard pictograms
    - GHS02
    - GHS07
    - GHS08

- **Signal word** Danger
  - Hazard-determining components of labeling:
    - cyclohexanone
    - strontium chromate
    - n-butyl acetate

(Contd. on page 2)
Trade name: MILBOND PRIMER KIT

Quartz (SiO2)

· Hazard statements
Highly flammable liquid and vapor.
Harmful if swallowed.
Causes serious eye irritation.
May cause cancer.
May cause drowsiness or dizziness.

· Precautionary statements
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/ lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Avoid breathing dust/fume/gas/mist/vapors/spray
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Call a poison center/doctor if you feel unwell.
Rinse mouth.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
In case of fire: Use for extinction: CO2, powder or water spray.
Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

· Classification system:

· NFPA ratings (scale 0 - 4)

Health = 2
Fire = 3
Reactivity = 0

· HMIS-ratings (scale 0 - 4)

HEALTH 2
Health = *2

FIRE 3
Fire = 3

REACTIVITY 0
Reactivity = 0

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

(Contd. of page 1)
3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:** Mixture of the substances listed below with nonhazardous additions.

<table>
<thead>
<tr>
<th>Chemical Identification</th>
<th>Percent Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>123-86-4 n-butyl acetate</td>
<td>&gt;10-≤25%</td>
</tr>
<tr>
<td>78-93-3 METHYL ETHYL KETONE</td>
<td>&gt;10-≤25%</td>
</tr>
<tr>
<td>14808-60-7 Quartz (SiO2)</td>
<td>&gt;10-≤25%</td>
</tr>
<tr>
<td>7789-06-2 strontium chromate</td>
<td>&gt;10-≤25%</td>
</tr>
<tr>
<td>108-94-1 cyclohexanone</td>
<td>&gt;10-≤25%</td>
</tr>
<tr>
<td>71-36-3 n-Butyl Alcohol</td>
<td>&gt;2.5-≤10%</td>
</tr>
</tbody>
</table>

4 First-aid measures

- **Description of first aid measures**
  - **General information:**
    Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
  - **After inhalation:**
    Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
    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. If symptoms persist, consult a doctor.
  - **After swallowing:**
    Immediately call a doctor.
  - **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:** CO2, sand, extinguishing powder. Do not use water.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture:** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
  Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
  Inform respective authorities in case of seepage into water course or sewage system.
  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.
Do not flush with water or aqueous cleansing agents

**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.

**Protective Action Criteria for Chemicals**

**PAC-1:**
- 123-86-4 n-butyl acetate 5 ppm
- 78-93-3 METHYL ETHYL KETONE 200 ppm
- 14808-60-7 Quartz (SiO2) 0.075 mg/m³
- 108-94-1 cyclohexanone 60 ppm
- 71-36-3 n-Butyl Alcohol 60 ppm

**PAC-2:**
- 123-86-4 n-butyl acetate 200 ppm
- 78-93-3 METHYL ETHYL KETONE 2700* ppm
- 14808-60-7 Quartz (SiO2) 33 mg/m³
- 108-94-1 cyclohexanone 830 ppm
- 71-36-3 n-Butyl Alcohol 800 ppm

**PAC-3:**
- 123-86-4 n-butyl acetate 3000* ppm
- 78-93-3 METHYL ETHYL KETONE 4000* ppm
- 14808-60-7 Quartz (SiO2) 200 mg/m³
- 108-94-1 cyclohexanone 5000* ppm
- 71-36-3 n-Butyl Alcohol 8000** ppm

**7 Handling and storage**

**Handling:**
**Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.

**Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect from heat.
Protect against electrostatic charges.
Keep respiratory protective device available.

**Conditions for safe storage, including any incompatibilities**

**Storage:**
**Requirements to be met by storerooms and receptacles:** Store in a cool location.
**Information about storage in one common storage facility:** Not required.

**Further information about storage conditions:**
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
Protect from heat and direct sunlight.
**Trade name:** MILBOND PRIMER KIT

- **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:**

    | Chemical | PEL Long-term value | REL Short-term value | REL Long-term value |
    |----------|---------------------|---------------------|---------------------|
    | 123-86-4 n-butyl acetate | 710 mg/m³, 150 ppm | 950 mg/m³, 200 ppm | 712 mg/m³, 150 ppm |
    | 78-93-3 METHYL ETHYL KETONE | 590 mg/m³, 200 ppm | 885 mg/m³, 300 ppm | 885 mg/m³, 300 ppm |
    | 14808-60-7 Quartz (SiO2) | 0.05 mg/m³ | 0.05 mg/m³ | 0.025 mg/m³ |
    | 7789-06-2 strontium chromate | 0.005 mg/m³ | 0.001 mg/m³ | 0.0005 mg/m³ |
    | 108-94-1 cyclohexanone | 200 mg/m³, 50 ppm | 100 mg/m³, 25 ppm | 50 mg/m³, 20 ppm |
    | 71-36-3 n-Butyl Alcohol | 300 mg/m³, 100 ppm | 150 mg/m³, 50 ppm | 61 mg/m³, 20 ppm |
## Trade name: MILBOND PRIMER KIT

### Ingredients with biological limit values:

<table>
<thead>
<tr>
<th>Chemical</th>
<th>BEI</th>
<th>Medium</th>
<th>Time</th>
<th>Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>78-93-3 METHYL ETHYL KETONE</td>
<td>2 mg/L</td>
<td>urine</td>
<td>end of shift</td>
<td>MEK</td>
</tr>
<tr>
<td>7789-06-2 strontium chromate</td>
<td>25 µg/L</td>
<td>urine</td>
<td>end of shift at end of workweek</td>
<td>Total chromium (fume)</td>
</tr>
<tr>
<td>108-94-1 cyclohexanone</td>
<td>80 mg/L</td>
<td>urine</td>
<td>end of shift at end of workweek</td>
<td>1.2-Cyclohexanediol with hydrolysis (nonspecific, semi-quantitative)</td>
</tr>
</tbody>
</table>

### Additional information:

The lists that were valid during the creation were used as basis.

### 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.
- Store protective clothing separately.
- Avoid contact with the eyes and skin.

#### 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. 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 degradation

#### 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.
### 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
  - **Appearance:**
    - Form: Liquid
    - Color: Yellow
  - **Odor:** Characteristic
  - **Odor threshold:** Not determined.
  - **pH-value:** Not determined.
  - **Change in condition**
    - **Melting point/Melting range:** Undetermined.
    - **Boiling point/Boiling range:** 79 °C (174.2 °F)
  - **Flash point:** -6 °C (21.2 °F)
  - **Flammability (solid, gaseous):** Not flammable.
  - **Ignition temperature:** 370 °C (698 °F)
  - **Decomposition temperature:** Not determined.
  - **Auto igniting:** Product is not selfigniting.
  - **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
  - **Explosion limits:**
    - Lower: 1.2 Vol %
    - Upper: 11.5 Vol %
  - **Vapor pressure at 20 °C (68 °F):** 105 hPa (78.8 mm Hg)
  - **Density:** Not determined.
    - **Relative density**
    - **Vapor density**
    - **Evaporation rate**
    - **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.
Trade name: MILBOND PRIMER KIT

- Solvent content:
  - Organic solvents: 51.4 %
  - VOC content: 51.35 %
  - Solids content: 0.0 %
- Other information
  - No further relevant information available.

10 Stability and reactivity

- Reactivity No further relevant information available.
- Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- Possibility of hazardous reactions No dangerous reactions known.
- Conditions to avoid No further relevant information available.
- Incompatible materials: No further relevant information available.
- Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

- Information on toxicological effects
- Acute toxicity:
  - LD/LC50 values that are relevant for classification:

<table>
<thead>
<tr>
<th>Substance</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalative LC50/4 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>108-94-1 cyclohexanone</td>
<td>1,535 mg/kg (rat)</td>
<td>948 mg/kg (rabbit)</td>
<td>8,000 mg/l (rat)</td>
</tr>
</tbody>
</table>

- Primary irritant effect:
  - on the skin: Irritant to skin and mucous membranes.
  - on the eye: Irritating effect.
  - Sensitization: No sensitizing effects known.

- Additional toxicological information:
The product shows the following dangers according to internally approved calculation methods for preparations: Harmful Irritant Carcinogenic.

- Carcinogenic categories
  - IARC (International Agency for Research on Cancer)
    - 14808-60-7 Quartz (SiO2) 1
    - 7789-06-2 strontium chromate 1
    - 108-94-1 cyclohexanone 3
  - NTP (National Toxicology Program)
    - 14808-60-7 Quartz (SiO2) K
    - 7789-06-2 strontium chromate K

(Contd. on page 9)
Trade name: MILBOND PRIMER KIT

- 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.
  - Ecotoxicological effects:
    - Remark: Toxic for fish
  - 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.
    - Also poisonous for fish and plankton in water bodies.
    - Toxic for aquatic organisms
  - 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: Disposal must be made according to official regulations.

### 14 Transport information

- UN-Number
  - DOT, ADR, IMDG, IATA
  - UN1263
- UN proper shipping name
  - DOT: Paint
  - ADR: 1263 PAINT, ENVIRONMENTALLY HAZARDOUS
  - IMDG: PAINT (strontium chromate), MARINE POLLUTANT
  - IATA: PAINT
**Transport hazard class(es)**

- **DOT**
  - Class 3 Flammable liquids
  - Label 3

- **ADR, IMDG**
  - Class 3 Flammable liquids
  - Label 3

- **IATA**
  - Class 3 Flammable liquids
  - Label 3

- **Packing group**
  - DOT, ADR, IMDG, IATA II

**Environmental hazards:**

- Product contains environmentally hazardous substances: strontium chromate
- Marine pollutant: Symbol (fish and tree)
- Special marking (ADR): Symbol (fish and tree)

- **Special precautions for user**
  - Warning: Flammable liquids
  - Danger code (Kemler): 33
  - EMS Number: F-E,S-E
  - Stowage Category B

- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**
  - Not applicable.

**Transport/Additional information:**

- **DOT**
  - Quantity limitations On passenger aircraft/rail: 5 L
  - On cargo aircraft only: 60 L

- **ADR**
  - Excepted quantities (EQ) Code: E2
  - Maximum net quantity per inner packaging: 30 ml
  - Maximum net quantity per outer packaging: 500 ml

- **IMDG**
  - Limited quantities (LQ) 5L
Trade name: MILBOND PRIMER KIT

(Contd. of page 10)

- **Excepted quantities (EQ)**
  - Code: E2
  - Maximum net quantity per inner packaging: 30 ml
  - Maximum net quantity per outer packaging: 500 ml

- **UN "Model Regulation":**
  - UN 1263 PAINT, 3, II, ENVIRONMENTALLY HAZARDOUS

### 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):**
      
      - 78-93-3 METHYL ETHYL KETONE
      - 7789-06-2 strontium chromate
      - 71-36-3 n-Butyl Alcohol
    
    - **TSCA (Toxic Substances Control Act):**
      
      - 119796-38-2 (Fatty acids, C18-unsatd, dimers, polymers with bisphenol A, epichlorohydrin and 1,1-methylenebis(4-isocyanatobenzene) ) Epoxy terminated urethane w/diphenyl methane dicyclopentadiene ACTIVE
      - 123-86-4 n-butyl acetate ACTIVE
      - 78-93-3 METHYL ETHYL KETONE ACTIVE
      - 14808-60-7 Quartz (SiO2) ACTIVE
      - 7789-06-2 strontium chromate ACTIVE
      - 108-94-1 cyclohexanone ACTIVE
      - 71-36-3 n-Butyl Alcohol ACTIVE
    
    - **Hazardous Air Pollutants**
      - 7789-06-2 strontium chromate
    
    - **Proposition 65**
      
      - **Chemicals known to cause cancer:**
        - 14808-60-7 Quartz (SiO2)
        - 7789-06-2 strontium chromate
    
    - **Chemicals known to cause reproductive toxicity for females:**
      - 7789-06-2 strontium chromate
    
    - **Chemicals known to cause reproductive toxicity for males:**
      - 7789-06-2 strontium chromate
    
    - **Chemicals known to cause developmental toxicity:**
      - 7789-06-2 strontium chromate

- **Carcinogenic categories**
  
  - **EPA (Environmental Protection Agency)**
    
    - 78-93-3 METHYL ETHYL KETONE 1
    - 7789-06-2 strontium chromate A(inh), D(oral), K/L(inh), CBD(oral)
    - 71-36-3 n-Butyl Alcohol D

(Contd. on page 12)
TLV (Threshold Limit Value established by ACGIH)

- 14808-60-7 Quartz (SiO2)
- 7789-06-2 strontium chromate
- 108-94-1 cyclohexanone

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

- 14808-60-7 Quartz (SiO2)
- 7789-06-2 strontium chromate

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

Hazard pictograms

- GHS02
- GHS07
- GHS08

Signal word Danger

Hazard-determining components of labeling:
- cyclohexanone
- strontium chromate
- n-butyl acetate
- Quartz (SiO2)

Hazard statements
- Highly flammable liquid and vapor.
- Harmful if swallowed.
- Causes serious eye irritation.
- May cause cancer.
- May cause drowsiness or dizziness.

Precautionary statements
- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- Ground/bond container and receiving equipment.
- Use explosion-proof electrical/ventilating/lighting/equipment.
- Use only non-sparking tools.
- Take precautionary measures against static discharge.
- Avoid breathing dust/fume/gas/mist/vapors/spray
- Wash thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Use only outdoors or in a well-ventilated area.
- Wear protective gloves/protective clothing/eye protection/face protection.
- If swallowed: Call a poison center/doctor if you feel unwell.
- Rinse mouth.
- If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- IF exposed or concerned: Get medical advice/attention.
- If eye irritation persists: Get medical advice/attention.
- In case of fire: Use for extinction: CO2, powder or water spray.
- Store in a well-ventilated place. Keep container tightly closed.
- Store in a well-ventilated place. Keep cool.
- Store locked up.
Trade name: MILBOND PRIMER KIT

Dispose of contents/container in accordance with local/regional/national/international regulations.

- **National regulations:**
- **Information about limitation of use:**
  Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Date of preparation / last revision** 07/11/2019 / -
- **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)
  - VOC: Volatile Organic Compounds (USA, EU)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - NIOSH: National Institute for Occupational Safety
  - OSHA: Occupational Safety Health
  - TLV: Threshold Limit Value
  - PEL: Permissible Exposure Limit
  - REL: Recommended Exposure Limit
  - BEI: Biological Exposure Limit
  - Flam. Liq. 2: Flammable liquids – Category 2
  - Acute Tox. 4: Acute toxicity – Category 4
  - Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
  - Carc. 1A: Carcinogenicity – Category 1A
  - STOT SE 3: Specific target organ toxicity (single exposure) – Category 3