SECTION 1. IDENTIFICATION

Product name: STAY/STEEL LN 35
Product code: 022232BF0

Manufacturer or supplier's details
Company name of supplier: ECKART GmbH
Address: Guentersthal 4
Hartenstein 91235
Telephone: +499152777008
Telefax: +499152777008
Emergency telephone:
CHEMTREC: 800-424-9300
CHEMTREC: 1-703-527-3387 (International)
GBK Gefahrgut Buero GmbH, Ingelheim, Germany:
From outside US: (001) 352-323-3500
(First call in English, response in your language is possible)
US & Canada (toll free): 1-800-5355-053

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200
Combustible dust

GHS label elements
Signal Word: Warning
Hazard Statements: May form combustible dust concentrations in air.

Other hazards
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron</td>
<td>7439-89-6</td>
<td>&gt;= 70 - &lt; 90</td>
</tr>
</tbody>
</table>
SECTION 4. FIRST AID MEASURES

General advice: Take the victim into fresh air. No hazards which require special first aid measures.

If inhaled: If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.

In case of skin contact: Wash off immediately with soap and plenty of water.

In case of eye contact: Remove contact lenses. If eye irritation persists, consult a specialist.

If swallowed: Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

Most important symptoms and effects, both acute and delayed: None known.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Dry sand
Special powder against metal fire

Unsuitable extinguishing media: ABC powder
Carbon dioxide (CO2)
Water
Foam

Specific hazards during fire fighting: Contact with water liberates extremely flammable gas (hydrogen).

Further information: Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Special protective equipment: Wear self-contained breathing apparatus for firefighting if
for fire-fighters necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:
- Use personal protective equipment.
- Evacuate personnel to safe areas.
- Avoid dust formation.

Methods and materials for containment and cleaning up:
- Use mechanical handling equipment.
- Do not use a vacuum cleaner.
  - Pick up and arrange disposal without creating dust.
  - Sweep up and shovel.
  - Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion:
- Use explosion-proof equipment.
  - During processing, dust may form explosive mixture in air.
  - Take measures to prevent the build up of electrostatic charge.
  - When transferring from one container to another apply earthing measures and use conductive hose material.
  - Normal measures for preventive fire protection.

Advice on safe handling:
- Avoid creating dust.
  - Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.
  - Store away from heat.
  - For personal protection see section 8.
  - Smoking, eating and drinking should be prohibited in the application area.

Conditions for safe storage:
- Earthing of containers and apparatuses is essential.
  - Reaction with water liberates extremely flammable gas (hydrogen)
  - Use explosion-proof equipment.
  - Store in original container.
  - Keep containers tightly closed in a cool, well-ventilated place.
  - Keep away from sources of ignition - No smoking.
  - Keep container closed when not in use.
  - Electrical installations / working materials must comply with the technological safety standards.
Technical measures/Precautions: Protect from humidity and water.

Materials to avoid: Do not store together with oxidizing and self-igniting products. Never allow product to get in contact with water during storage. Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions. No materials to be especially mentioned.

Further information on storage stability: Keep in a dry place.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron</td>
<td>7439-89-6</td>
<td>TWA (total dust)</td>
<td>50 Million particles per cubic foot</td>
<td>OSHA Z-3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (total dust)</td>
<td>15 mg/m³</td>
<td>OSHA Z-3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (respirable fraction)</td>
<td>5 mg/m³</td>
<td>OSHA Z-3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (respirable fraction)</td>
<td>15 Million particles per cubic foot</td>
<td>OSHA Z-3</td>
</tr>
<tr>
<td>Chromium</td>
<td>7440-47-3</td>
<td>TWA</td>
<td>0.5 mg/m³</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>0.5 mg/m³</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>OSHA P0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>0.5 mg/m³ (chromium)</td>
<td>OSHA Z-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>1 mg/m³ (chromium)</td>
<td>OSHA Z-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>0.5 mg/m³</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>0.5 mg/m³</td>
<td>ACGIH</td>
</tr>
<tr>
<td>Compound</td>
<td>Chemical Identity</td>
<td>Exposure Limit</td>
<td>Standardization Organization</td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td>-------------------</td>
<td>----------------</td>
<td>------------------------------</td>
<td></td>
</tr>
<tr>
<td>Manganese</td>
<td>7439-96-5</td>
<td>TWA 0.2 mg/m³ (chromium)</td>
<td>ACGIH</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA 1 mg/m³ (Manganese)</td>
<td>OSHA Z-1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ST (Fumes) 3 mg/m³ (Manganese)</td>
<td>NIOSH REL</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Fumes) 3 mg/m³ (Manganese)</td>
<td>OSHA P0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL (Fumes) 3 mg/m³ (Manganese)</td>
<td>OSHA P0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Fumes) 1 mg/m³ (Manganese)</td>
<td>NIOSH REL</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ST (Fumes) 3 mg/m³ (Manganese)</td>
<td>NIOSH REL</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Fumes) 1 mg/m³ (Manganese)</td>
<td>OSHA P0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL (Fumes) 3 mg/m³ (Manganese)</td>
<td>OSHA P0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Inhalable fraction) 0.1 mg/m³ (Manganese)</td>
<td>ACGIH</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Respirable fraction) 0.02 mg/m³ (Manganese)</td>
<td>ACGIH</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Fumes) 1 mg/m³ (Manganese)</td>
<td>NIOSH REL</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ST (Fumes) 3 mg/m³ (Manganese)</td>
<td>NIOSH REL</td>
<td></td>
</tr>
<tr>
<td>Molybdenum</td>
<td>7439-98-7</td>
<td>TWA (Inhalable fraction) 10 mg/m³</td>
<td>ACGIH</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Respirable fraction) 3 mg/m³</td>
<td>ACGIH</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Inhalable fraction) 10 mg/m³ (Molybdenum)</td>
<td>ACGIH</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Respirable fraction) 3 mg/m³ (Molybdenum)</td>
<td>ACGIH</td>
<td></td>
</tr>
</tbody>
</table>
**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

- **Appearance**: powder
- **Color**: silver
- **Odor**: odorless
- **Odor Threshold**: No data available
- **pH**: No data available
- **Melting point/range**: 660 °C
- **Boiling point/boiling range**: > 999 °C
- **Flash point**: No data available
- **Evaporation rate**: No data available
- **Flammability (solid, gas)**: combustible dust
- **Upper explosion limit / Upper flammability limit**: No data available
- **Lower explosion limit / Lower**: 30 g/m3
flamamibility limit
Vapor pressure : No data available
Relative density : No data available
Solubility(ies) : No data available
Partition coefficient: n-octanol/water : No data available
Autoignition temperature : No data available
Decomposition temperature : No data available
Viscosity : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.
Chemical stability : No decomposition if stored and applied as directed.
Possibility of hazardous reactions : Contact with acids and alkalis may release hydrogen.
Stable under recommended storage conditions.
Dust may form explosive mixture in air.
Conditions to avoid : No data available
Incompatible materials : Acids
Bases
Oxidizing agents
Water

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity
Not classified based on available information.

Ingredients:
Chromium:
Acute oral toxicity : LD50 Oral: > 5,000 mg/kg
Acute inhalation toxicity : LC50: > 5.41 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Manganese:
Acute oral toxicity : LD50 Oral: > 2,000 mg/kg
Acute inhalation toxicity : LC50: 5.14 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Molybdenum:
Acute oral toxicity : LD50 Oral: > 2,000 mg/kg
Acute inhalation toxicity : LC50: ca. 2 mg/l
  Exposure time: 4 h  
  Test atmosphere: dust/mist

Skin corrosion/irritation
Not classified based on available information.

Serious eye damage/eye irritation
Not classified based on available information.

Respiratory or skin sensitization

Skin sensitization
Not classified based on available information.

Respiratory sensitization
Not classified based on available information.

Germ cell mutagenicity
Not classified based on available information.

Carcinogenicity
Not classified based on available information.

IARC
No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA
No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.

NTP
No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity
Not classified based on available information.

STOT—single exposure
Not classified based on available information.
STOT-repeated exposure
Not classified based on available information.

Aspiration toxicity
Not classified based on available information.

Further information

Ingredients:
Iron:
Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity
No data available

Persistence and degradability
No data available

Bioaccumulative potential
No data available

Other adverse effects
No data available

Ingredients:
Iron:

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods
Waste from residues : In accordance with local and national regulations.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.
In accordance with local and national regulations.

SECTION 14. TRANSPORT INFORMATION

International Regulations
Remarks : Not classified as dangerous in the meaning of transport
regulations.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

**Domestic regulation**

**SECTION 15. REGULATORY INFORMATION**

**EPCRA - Emergency Planning and Community Right-to-Know**

**CERCLA Reportable Quantity**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS-No.</th>
<th>Component RQ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium</td>
<td>7440-47-3</td>
<td>5000</td>
</tr>
</tbody>
</table>

**SARA 304 Extremely Hazardous Substances Reportable Quantity**
This material does not contain any components with a section 304 EHS RQ.

**SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**
This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards**

: Combustible dust

**SARA 313**

: The following components are subject to reporting levels established by SARA Title III, Section 313:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>RQ 10 - 20 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium</td>
<td>7440-47-3</td>
<td>&gt;= 10 - &lt; 20 %</td>
</tr>
<tr>
<td>Manganese</td>
<td>7439-96-5</td>
<td>&gt;= 5 - &lt; 10 %</td>
</tr>
</tbody>
</table>

**Clean Air Act**

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>RQ 15.8053 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium</td>
<td>7440-47-3</td>
<td>15.8053 %</td>
</tr>
<tr>
<td>Manganese</td>
<td>7439-96-5</td>
<td>8.1512 %</td>
</tr>
</tbody>
</table>

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

**Clean Water Act**

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.
This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.
This product contains the following toxic pollutants listed under the U.S. Clean Water Act Section 307

Chromium 7440-47-3 15.8053 %

US State Regulations

Massachusetts Right To Know

Chromium 7440-47-3
Manganese 7439-96-5
Molybdenum 7439-98-7
Nickel 7440-02-0

Pennsylvania Right To Know

Iron 7439-89-6
Chromium 7440-47-3
Manganese 7439-96-5
Molybdenum 7439-98-7
Nickel 7440-02-0

California Prop. 65

WARNING: This product can expose you to chemicals including lead and cadmium, which is/are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

WARNING: This product can expose you to chemicals including Nickel, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

California List of Hazardous Substances

Iron 7439-89-6

Chromium 7440-47-3

Manganese 7439-96-5
California Permissible Exposure Limits for Chemical Contaminants

Iron 7439-89-6
Chromium 7440-47-3
Manganese 7439-96-5
Molybdenum 7439-98-7

The ingredients of this product are reported in the following inventories:

- DSL: All components of this product are on the Canadian DSL
- TSCA: On TSCA Inventory

TSCA list
No substances are subject to a Significant New Use Rule.
No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

- ACGIH: USA. ACGIH Threshold Limit Values (TLV)
- NIOSH REL: USA. NIOSH Recommended Exposure Limits
- OSHA P0: USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
- OSHA Z-1: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
- OSHA Z-3: USA. Occupational Exposure Limits (OSHA) - Table Z-3 Mineral Dusts
- ACGIH / TWA: 8-hour, time-weighted average
- NIOSH REL / TWA: Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
- NIOSH REL / ST: STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
- OSHA P0 / TWA: 8-hour time weighted average
- OSHA P0 / STEL: Short-term exposure limit
OSHA Z-1 / TWA : 8-hour time weighted average
OSHA Z-1 / C : Ceiling
OSHA Z-3 / TWA : 8-hour time weighted average

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50% of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restrictions of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Revision Date : 03/26/2018

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

US / Z8