

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**hydraulic fluid ZH-M**  
**Article number: 02615**

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

#### 1.2.1 Relevant uses

Hydraulics oil

#### 1.2.2 Uses advised against

None known.

### 1.3 Details of the supplier of the safety data sheet

**Company** Ferdinand Bilstein GmbH + Co. KG  
Wilhelmstr. 47  
58256 Ennepetal / GERMANY  
Phone +49 2333 911-0  
Fax +49 2333 911-444  
Homepage [www.febi.com](http://www.febi.com)  
E-mail [info@febi.com](mailto:info@febi.com)

#### Address enquiries to

**Technical information** [info@febi.com](mailto:info@febi.com)

**Safety Data Sheet** [info@febi.com](mailto:info@febi.com)

### 1.4 Emergency telephone number

**Advisory body** +49 (0)89-19240 (24h) (English)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

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

### 2.2 Label elements

The product is classified as hazardous in accordance to OSHA Standard 29 CFR 1910.1200 (HCS 2012)

#### Hazard pictograms



#### Signal word

DANGER

#### Contains:

Distillates (petroleum), hydrotreated light naphthenic, CAS: 64742-53-6

#### Hazard statements

H304 May be fatal if swallowed and enters airways.

#### Precautionary statements

P101 If medical advice is needed, have product container or label at hand.  
P102 Keep out of reach of children.  
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.  
P331 Do NOT induce vomiting.  
P405 Store locked up.  
P501 Dispose of contents / container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

### 2.3 Other hazards

#### Human health dangers

If swallowed or in the event of vomiting, risk of product entering the lungs.

#### Environmental hazards

Does not contain any PBT or vPvB substances.  
Contains no ingredients with endocrine-disrupting properties.

#### Other hazards

No particular hazards known.

This product is classified as hazardous in accordance to OSHA Standard 29 CFR 1910.1200.

### SECTION 3: Composition / Information on ingredients

#### 3.1 Substances

Not applicable

#### 3.2 Mixtures

The product is a mixture.

Range [%]	Substance
50 - < 100	Distillates (petroleum), hydrotreated light naphthenic CAS: 64742-53-6
10 - < 20	Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based (containing < 3% DMSO-extract) CAS: 72623-86-0
1 - < 10	Distillates (petroleum), hydrotreated heavy paraffinic (containing < 3% DMSO-extract) CAS: 64742-54-7
0,1 - < 1	Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene CAS: 68411-46-1

Comment on component parts

For full text of H-statements: see SECTION 16.

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

General information

Take off contaminated clothing and wash before reuse.

Inhalation

Ensure supply of fresh air.  
In the event of symptoms seek medical treatment.

Skin contact

When in contact with the skin, clean with soap and water.  
Consult a doctor if skin irritation persists.

Eye contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
If eye irritation persists: Get medical advice/attention.

Ingestion

Seek medical advice immediately.  
Do not induce vomiting.  
Rinse out mouth and give plenty of water to drink.

#### 4.2 Most important symptoms and effects, both acute and delayed

No information available.

#### 4.3 Indication of any immediate medical attention and special treatment needed

If swallowed or in the event of vomiting, risk of product entering the lungs.  
Treat symptomatically.  
Forward this sheet to the doctor.

### SECTION 5: Fire-fighting measures

#### 5.1 Extinguishing media

Suitable extinguishing media

Foam, dry powder, water spray jet, carbon dioxide

Extinguishing media that must not be used

Full water jet

#### 5.2 Special hazards arising from the substance or mixture

Not combusted hydrocarbons.  
Risk of formation of toxic pyrolysis products.  
Carbon monoxide (CO)

### 5.3 Advice for firefighters

Use self-contained breathing apparatus.  
Do not inhale explosion and/or combustion gases.  
Cool containers at risk with water spray jet.  
Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

High risk of slipping due to leakage/spillage of product.  
Forms slippery surfaces with water.

### 6.2 Environmental precautions

Prevent spread over a wide area (e.g. by containment or oil barriers).  
Do not discharge into the drains/surface waters/groundwater.

### 6.3 Methods and material for containment and cleaning up

Take up with absorbent material (e.g. general-purpose binder).  
Dispose of absorbed material in accordance with the regulations.

### 6.4 Reference to other sections

See SECTION 8+13

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Avoid formation of aerosols.

Do not eat, drink or smoke when using this product.  
Use barrier skin cream.  
Wash hands before breaks and after work.  
Cloths contaminated with product should not be kept in trouser pockets.  
Contaminated work clothing should not be allowed out of the workplace.  
Take off contaminated clothing and wash before reuse.

### 7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.  
Prevent penetration into the ground.  
Do not store together with food and animal food/diet.  
Keep container tightly closed.  
Keep container in a well-ventilated place.

### 7.3 Specific end use(s)

See product use, SECTION 1.2



**SECTION 8: Exposure controls/personal protection**

**8.1 Control parameters**

**Ingredients with occupational exposure limits to be monitored (US)**

Substance
Distillates (petroleum), hydrotreated light naphthenic
CAS: 64742-53-6
Long-term exposure: 5 mg/m <sup>3</sup> , ACGIH, TWA, Oil mist, mineral (inhalable fraction)
Destillates (petroleum), hydrotreated heavy paraffinic (containing < 3% DMSO-extract)
CAS: 64742-54-7
Long-term exposure: 5 mg/m <sup>3</sup> , OSHA, oil mist

**DNEL**

Substance
Distillates (petroleum), hydrotreated light naphthenic, CAS: 64742-53-6
Industrial, inhalative, Long-term - local effects, 5,4 mg/m <sup>3</sup>
Destillates (petroleum), hydrotreated heavy paraffinic (containing < 3% DMSO-extract), CAS: 64742-54-7
Industrial, inhalative, Long-term - systemic effects, 2,73 mg/m <sup>3</sup>
Industrial, inhalative, Long-term - local effects, 5,58 mg/m <sup>3</sup>
Industrial, dermal, Long-term - systemic effects, 970 µg/kg bw/day
general population, inhalative, Long-term - local effects, 1,19 mg/m <sup>3</sup>
general population, oral, Long-term - systemic effects, 740 µg/kg bw/day
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based (containing < 3% DMSO-extract), CAS: 72623-86-0
Industrial, inhalative, Long-term - systemic effects, 2,73 mg/m <sup>3</sup>
Industrial, inhalative, Long-term - local effects, 5,58 mg/m <sup>3</sup>
Industrial, dermal, Long-term - systemic effects, 970 µg/kg bw/day
general population, inhalative, Long-term - local effects, 1,19 mg/m <sup>3</sup>
general population, oral, Long-term - systemic effects, 740 µg/kg bw/day
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene, CAS: 68411-46-1
Industrial, inhalative, Long-term - systemic effects, 0,31 mg/m <sup>3</sup> (AF= 50)
Industrial, dermal, Long-term - systemic effects, 0,44 mg/kg bw/d (AF= 200)
general population, inhalative, Long-term - systemic effects, 0,08 mg/m <sup>3</sup> (AF= 100)
general population, dermal, Long-term - systemic effects, 0,22 mg/kg bw/d (AF= 400)
general population, oral, Long-term - systemic effects, 0,05 mg/kg bw/d (AF= 400)

**PNEC**

Substance
Destillates (petroleum), hydrotreated heavy paraffinic (containing < 3% DMSO-extract), CAS: 64742-54-7
oral (food), 9,33 mg/kg
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based (containing < 3% DMSO-extract), CAS: 72623-86-0
oral (food), 9,33 mg/kg food
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene, CAS: 68411-46-1
freshwater, 33,8 µg/L
seawater, 3,38 µg/L
sewage treatment plants (STP), 10 mg/L
sediment (freshwater), 446 µg/kg sediment dw
sediment (seawater), 44,6 µg/kg sediment dw
soil, 17,6 mg/kg soil dw



oral (food), 833 µg/kg food

## 8.2 Exposure controls

<b>Additional advice on system design</b>	Ensure adequate ventilation on workstation. General limit for oil mist should be noted. Measurement methods for taking workplace measurements must meet the performance requirements of DIN EN 482. For example, recommendations are given in the IFA's list of hazardous substances.
<b>Eye protection</b>	safety glasses (EN 166:2001)
<b>Hand protection</b>	The details concerned are recommendations. Please contact the glove supplier for further information. > 0,4 mm; Nitrile rubber, >480 min (EN 374-1/-2/-3). > 0,4 mm; Neoprene, >480 min (EN 374-1/-2/-3).
<b>Skin protection</b>	light protective clothing
<b>Other</b>	Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity handled. The resistance of this equipment to chemicals should be ascertained with the respective supplier. Avoid contact with eyes and skin.
<b>Respiratory protection</b>	Breathing apparatus in the event of aerosol or mist formation. Short term: filter apparatus, combination filter A-P1. (DIN EN 14387)
<b>Thermal hazards</b>	No information available.
<b>Delimitation and monitoring of the environmental exposition</b>	Comply with applicable environmental regulations limiting discharge to air, water and soil.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical state	Liquid
Form	Liquid
Color	light yellow
Odor	characteristic
Odor threshold	Not applicable
pH-value	Not applicable
pH-value [1%]	Not applicable
Boiling point or initial boiling point and boiling range [°C]	No information available.
Flash point [°C]	152 (EN ISO 2592)
Flammability	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Oxidizing properties	No
Vapor pressure/gas pressure [kPa]	No information available.
Density [g/cm <sup>3</sup> ]	0,87 (DIN 51757) (15 °C / 59,0 °F)
Relative density	Not determined
Bulk density [kg/m <sup>3</sup> ]	Not applicable
Solubility in water	immiscible
Solubility other solvents	No information available.
Partition coefficient n-octanol/water (log value)	No information available.
Kinematic viscosity	17,1 mm <sup>2</sup> /s (40°C) (DIN 51562)
Relative vapour density	No information available.
Melting point [°C]	No information available.
Auto-ignition temperature [°C]	No information available.
Decomposition temperature [°C]	No information available.
Particle characteristics	No information available.

### 9.2 Other information

None

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No dangerous reactions known if used as directed.

### 10.2 Chemical stability

Stable under normal ambient conditions (ambient temperature).

### 10.3 Possibility of hazardous reactions

Reactions with strong oxidizing agents.

### 10.4 Conditions to avoid

Strong heating.



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### **10.5 Incompatible materials**

Oxidizing agent  
strong acids  
Strong basic compounds

### **10.6 Hazardous decomposition products**

No hazardous decomposition products known.



## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute oral toxicity

Product
oral, Based on the information available, the classification criteria have not been fulfilled.
Substance
Distillates (petroleum), hydrotreated light naphthenic, CAS: 64742-53-6
LD50, oral, Rat, > 5000 mg/kg bw
Destillates (petroleum), hydrotreated heavy paraffinic (containing < 3% DMSO-extract), CAS: 64742-54-7
LD50, oral, Rat, 5000 mg/kg bw
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based (containing < 3% DMSO-extract), CAS: 72623-86-0
LD50, oral, Rat, 5000 mg/kg bw
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene, CAS: 68411-46-1
LD50, oral, Rat, >5000 mg/kg bw
NOAEL, oral, Rat, 25 mg/kg bw/day

#### Acute dermal toxicity

Product
dermal, Based on the information available, the classification criteria have not been fulfilled.
Substance
Distillates (petroleum), hydrotreated light naphthenic, CAS: 64742-53-6
LD50, dermal, Rabbit, > 2000 mg/kg bw
Destillates (petroleum), hydrotreated heavy paraffinic (containing < 3% DMSO-extract), CAS: 64742-54-7
LD50, dermal, Rabbit, 2000 - 5 00 mg/kg bw
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based (containing < 3% DMSO-extract), CAS: 72623-86-0
LD50, dermal, Rabbit, 2000 - 5000 mg/kg bw
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene, CAS: 68411-46-1
LD50, dermal, Rat, >2000 mg/kg bw

#### Acute inhalational toxicity

Product
inhalative, Based on the information available, the classification criteria have not been fulfilled.
Substance
Distillates (petroleum), hydrotreated light naphthenic, CAS: 64742-53-6
LC50, inhalative, Rat, > 5,53 mg/l/4h (dust/mist)
Destillates (petroleum), hydrotreated heavy paraffinic (containing < 3% DMSO-extract), CAS: 64742-54-7
LC50, inhalative, Rat, 2.18 - 5.53 mg/L air, 4h
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based (containing < 3% DMSO-extract), CAS: 72623-86-0
LC50, inhalative, Rat, 2.18 - 5.53 mg/L air, 4h

#### Serious eye damage/irritation

Based on the information available, the classification criteria have not been fulfilled.

Substance
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Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based (containing < 3% DMSO-extract), CAS: 72623-86-0
Eye, non-irritating

**Skin corrosion/irritation** Based on the information available, the classification criteria have not been fulfilled.

Substance
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based (containing < 3% DMSO-extract), CAS: 72623-86-0
dermal, non-irritating

**Respiratory or skin sensitisation** Based on the information available, the classification criteria have not been fulfilled.

Substance
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based (containing < 3% DMSO-extract), CAS: 72623-86-0
dermal, non-sensitizing

**Specific target organ toxicity — single exposure** Based on the information available, the classification criteria have not been fulfilled.

**Specific target organ toxicity — repeated exposure** Based on the information available, the classification criteria have not been fulfilled.

Substance
Destillates (petroleum), hydrotreated heavy paraffinic (containing < 3% DMSO-extract), CAS: 64742-54-7
NOAEL, dermal, Rat, 30 - 2000 mg/kg bw/day
NOAEL, dermal, Rabbit, 1000 mg/kg bw/day
NOAEC, inhalative, Rat, 980 mg/m <sup>3</sup> air
LOAEL, oral, Rat, 125 mg/kg bw/day
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based (containing < 3% DMSO-extract), CAS: 72623-86-0
NOAEL, dermal, Rat, 30 - 2000 mg/kg bw/day
NOAEC, inhalative, Rat, 980 mg/m <sup>3</sup> air
LOAEL, oral, Rat, 125 mg/kg bw/day

**Mutagenicity** Based on the information available, the classification criteria have not been fulfilled.

Substance
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based (containing < 3% DMSO-extract), CAS: 72623-86-0
in vitro, negativ

**Reproduction toxicity** Based on the information available, the classification criteria have not been fulfilled.

**- Fertility**

Substance
Destillates (petroleum), hydrotreated heavy paraffinic (containing < 3% DMSO-extract), CAS: 64742-54-7
NOAEL, oral, Rat, 1000 mg/kg bw/d (Effect on fertility), no adverse effect observed
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based (containing < 3% DMSO-extract), CAS: 72623-86-0
NOAEL, oral, Rat, 1000 mg/kg bw/day

**- Development**

Substance
Destillates (petroleum), hydrotreated heavy paraffinic (containing < 3% DMSO-extract), CAS: 64742-54-7
NOAEL, oral, Rat, 1000 mg/kg bw/d (Effect on fertility), no adverse effect observed



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Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene, CAS: 68411-46-1
NOAEL, parenteral, 75 mg/kg bw/d, OECD 422

**Carcinogenicity** Based on the information available, the classification criteria have not been fulfilled.

**Aspiration hazard** Based on the information available, the classification criteria have been fulfilled.  
May be fatal if swallowed and enters airways.  
On basis of test data

**General remarks** Toxicological data of complete product are not available.  
The toxicity data listed pertaining to the ingredients are intended for those working in the medicinal professions, experts for occupational health and safety and toxicologists.

**SECTION 12: Ecological information**

**12.1 Toxicity**

Product
Based on the information available, the classification criteria have not been fulfilled.
Substance
Distillates (petroleum), hydrotreated light naphthenic, CAS: 64742-53-6
LC50, (96h), fish, > 100 mg/l
IC50, (48h), Algae, > 100 mg/l
Destillates (petroleum), hydrotreated heavy paraffinic (containing < 3% DMSO-extract), CAS: 64742-54-7
EL50, (48h), Invertebrates, 10 g/L
NOELR, (14d), fish, 1 mg/L
LL50, (96h), Invertebrates, 10 g/L
LL50, (96h), fish, 100 mg/L
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based (containing < 3% DMSO-extract), CAS: 72623-86-0
NOELR, (14d), fish, 1 g/L
LL50, (96h), Invertebrates, 10 g/L
LL50, (96h), fish, 100 mg/L
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene, CAS: 68411-46-1
LC50, (96h), fish, 100 mg/L
EC50, (48h), Invertebrates, 51 mg/L
EC50, (72h), Invertebrates, 100 mg/L
EL10, (21d), Invertebrates, 1.69 mg/L

**12.2 Persistence and degradability**

**Behaviour in environment compartments** Not determined

**Behaviour in sewage plant** Not determined

**Biological degradability** The product is slightly soluble in water. It can be largely eliminated from the water by abiotic processes, e.g. mechanical separation.

**12.3 Bioaccumulative potential**

No information available.

**12.4 Mobility in soil**

No information available.

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**12.5 Results of PBT and vPvB assessment**

Based on all available information not to be classified as PBT or vPvB respectively.

**12.6 Endocrine disrupting properties**

Contains no ingredients with endocrine-disrupting properties.

**12.7 Other adverse effects**

The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.

**SECTION 13: Disposal considerations**

**13.1 Waste treatment methods**

**Product**

In according to RoHS!  
Coordinate disposal with the authorities if necessary.  
Dispose of as hazardous waste.

**Contaminated packaging**

Uncontaminated packaging may be taken for recycling.  
Packaging that cannot be cleaned should be disposed of as for product.

**RCRA Hazard Class (40CFR 261)**

Waste must be disposed of in accordance with federal, state and local environmental control regulations. Consult your local or regional authorities.

**SECTION 14: Transport**

**14.1 UN number**

Transport by land according to ADR/RID Not applicable

Inland navigation (ADN) Not applicable

Marine transport in accordance with IMDG Not applicable

Air transport in accordance with IATA Not applicable

DOT Road Shipment Information (49 CFR) Not applicable

**14.2 UN proper shipping name**

Transport by land according to ADR/RID NO DANGEROUS GOODS

Inland navigation (ADN) NO DANGEROUS GOODS

Marine transport in accordance with IMDG NOT CLASSIFIED AS "DANGEROUS GOODS"

Air transport in accordance with IATA NOT CLASSIFIED AS "DANGEROUS GOODS"

DOT Road Shipment Information (49 CFR) Not applicable

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**14.3 Transport hazard class(es)**

Transport by land according to ADR/RID Not applicable

Inland navigation (ADN) Not applicable

Marine transport in accordance with IMDG Not applicable

Air transport in accordance with IATA Not applicable

DOT Road Shipment Information (49 CFR) Not applicable

**14.4 Packing group**

Transport by land according to ADR/RID Not applicable

Inland navigation (ADN) Not applicable

Marine transport in accordance with IMDG Not applicable

Air transport in accordance with IATA Not applicable

DOT Road Shipment Information (49 CFR) Not applicable

**14.5 Environmental hazards**

Transport by land according to ADR/RID No

Inland navigation (ADN) No

Marine transport in accordance with IMDG No

Air transport in accordance with IATA No

DOT Road Shipment Information (49 CFR) No

**14.6 Special precautions for user**

Relevant information under SECTION 6 to 8.

Not applicable

**14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code**

Not applicable

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

#### US Regulations

<b>National regulations</b>	29 CFR 1910.1200-HCS 2012, OSHA-PEL, ACGIH-TLV, NTP, IARC, SARA Title III, NFPA, TSCA, California - Prop. 65
- SARA, 302	No information available.
- SARA, 311	No information available.
- SARA, 313	No information available.
- TSCA	All chemical substances in this material are included on or exempted from listing on the TSCA Inventory.
- FDA	No information available.
<b>American Conference of Governmental Industrial Hygienists - ACGIH</b>	No information available.
<b>International Agency for Research on Cancer IARC</b>	No information available.
<b>National Toxicology Program - NTP</b>	No information available.
<b>HAP-VOC</b>	No information available.
<b>Transport-regulations</b>	DOT-Classification, ADR (2023); IMDG-Code (2023, 41. Amdt.); IATA-DGR (2024)

### 15.2 Chemical safety assessment

For this product a chemical safety assessment has not been carried out.

## SECTION 16: Other information

### 16.1 Abbreviations and acronyms:

ACGIH = American Conference of Governmental Industrial Hygienists;  
ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route;  
RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses;  
ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure;  
CAS = Chemical Abstracts Service;  
CERCLA = Comprehensive Environmental Response, Compensation and Liability Act;  
CFR = Code of Federal Regulations;  
CPR = Controlled Products Regulations;  
DMEL = Derived Minimum Effect Level;  
DNEL = Derived No Effect Level;  
DOT = Department of Transportation;  
EC50 = Median effective concentration;  
EPA = Environmental Protection Agency;  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals;  
IATA = International Air Transport Association;  
IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk;  
IC50 = Inhibition concentration, 50%;  
IMDG = International Maritime Code for Dangerous Goods;  
IARC = International Agency of Research on Cancer;  
IATA = International Air Transport Association;  
TSCA = Toxic Substance Control Act;  
HMIS = Hazardous Materials Identification System;  
NFPA = National Fire Protection Association;  
NIOSH = National Institute for Occupational Safety and Health;  
OSHA = Occupational Safety and Health Administration;  
LC50 = Lethal concentration, 50%;  
LD50 = Median lethal dose, 50%;  
MARPOL = International Convention for the Prevention of Marine Pollution from Ships;  
PBT = Persistent, Bioaccumulative and Toxic substance;  
PNEC = Predicted No-Effect Concentration;  
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals;  
SARA = Superfund Amendments and Reauthorization Act;  
TLV@/TWA = Threshold limit value – time-weighted average;  
TLV@STEL = Threshold limit value – short-time exposure limit;  
VOC = Volatile Organic Compounds;  
vPvB = very Persistent and very Bioaccumulative;

### 16.2 Ratings

**NFPA Ratings**



TOP, FLAMMABILITY: 1 - Slight Hazard  
LEFT, HEALTH: 2 - Moderate Hazard  
RIGHT, REACTIVITY: 1 - Slight Hazard  
BOTTOM, SPECIAL NOTICE:

**HMIS Ratings**

HEALTH	2
FLAMMABILITY	1
PHYSICAL HAZARD	1
PERSONAL PROTECTION	X

2 - Moderate Hazard  
1 - Slight Hazard  
1 - Slight Hazard  
X - Personal protection rating to be supplied by user depending on use conditions

**PERSONAL PROTECTION:**

- A - Safety Glasses
- B - Safety Glasses and Gloves
- C - Safety Glasses, Gloves and Protection Apron
- D - Face Shield, Gloves and Protection Apron
- E - Safety Glasses, Gloves and Dust Respirator
- F - Safety Glasses, Gloves, Protection Apron and Dust Respirator
- G - Safety Glasses, Gloves and Vapor Respirator.
- H - Splash Goggles, Gloves, Protection Apron and Vapor Respirator.
- I - Safety Glasses, Gloves, Dust Respirator and Vapor Respirator.
- J - Splash Goggles, Gloves, Protection Apron, Dust Respirator and Vapor Respirator.
- K - Airline Mask or Hood, Gloves, Full Suit and Boots.
- X - Personal protection rating to be supplied by user depending on use conditions

**Modified position**

3.2