

According to OSHA Hazard Communication Standard 29CFR 1910.1200 (HCS 2012)

Tel 336-2881613 sales@jorlink.com

RD-6192 All-in-One Marking Material

Product specification	RS_FP_606158	Revision Date	09/13/2019
Version	0.0	Print Date	09/13/2019
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SECTION 1. IDENTIFICATION

Product name : **RD-6192 All-in-One Marking Material**

Manufacturer or supplier's details

Company name of supplier : Ferro Corporation

Address : 6060 Parkland Blvd. Suite 250
Mayfield Heights OH 44124-4185

Telephone : (216) 875-5600

Emergency telephone number

In-Country Number : (800)424-9300

CHEMTREC Global Number : +(1)-703-527-3887 (Call Collect)

Recommended use of the chemical and restrictions on use

Recommended use : Consult the technical guidelines for the use of this substance/mixture.

SECTION 2. HAZARDS IDENTIFICATION
GHS Classification

Flammable liquids : Category 2

Eye irritation : Category 2A

GHS Label element

Hazard pictograms :



Signal word : Danger

Hazard statements : H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.

Precautionary statements : **Prevention:**

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/

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- P242 ventilating/ lighting/ equipment.
 - P243 Use only non-sparking tools.
 - P264 Take precautionary measures against static discharge.
 - P280 Wash skin thoroughly after handling.
 - Wear protective gloves/ eye protection/ face protection.
- Response:**
- P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 - P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 - P337 + P313 If eye irritation persists: Get medical advice/ attention.
 - P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
- Storage:**
- P403 + P235 Store in a well-ventilated place. Keep cool.
- Disposal:**
- P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

- Substance / Mixture : Mixture
- Chemical nature : organic solvent, inorganic pigment, inorganic metal-nonmetal compound, silicon/siloxane, silicatic material, metal/metal compound

Hazardous components

Chemical Name	CAS-No.	Concentration (%)
ethanol	64-17-5	>= 30 - < 50
Trade Secret Molybdenum Compound	Not Assigned	>= 5 - < 10
mica	12001-26-2	>= 5 - < 10
Trade Secret Silicon Compound	Not Assigned	>= 5 - < 10
Trade Secret Manganese Compound	Not Assigned	>= 1 - < 5
Silica, amorphous	112945-52-5	>= 1 - < 5
Trade Secret Boron Compound	Not Assigned	>= 1 - < 5

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SECTION 4. FIRST AID MEASURES

- General advice : Consult a physician.
- If inhaled : Remove to fresh air.
If symptoms persist, call a physician.
- In case of skin contact : If skin irritation persists, call a physician.
- In case of eye contact : Rinse immediately with plenty of water and seek medical advice.
- If swallowed : If accidentally swallowed obtain immediate medical attention.
- Most important symptoms and effects, both acute and delayed : Causes serious eye irritation.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Follow safe handling advice and personal protective equipment recommendations.
- Environmental precautions : Do not allow uncontrolled discharge of product into the environment.
- Methods and materials for containment and cleaning up : Sweep up and shovel into suitable containers for disposal. Clean contaminated floors and objects thoroughly while observing environmental regulations.

SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : Avoid inhalation, ingestion and contact with skin and eyes.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated

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place.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
ethanol	64-17-5	TWA	1,000 ppm	ACGIH
		TWA	1,000 ppm 1,900 mg/m3	NIOSH REL
		TWA	1,000 ppm 1,900 mg/m3	OSHA Z-1
		TWA	1,000 ppm 1,900 mg/m3	OSHA P0
		STEL	1,000 ppm	ACGIH
Trade Secret Molybdenum Compound	Not Assigned	TWA	5 mg/m3 (Molybdenum)	OSHA Z-1
		TWA (Respirable fraction)	0.5 mg/m3 (Molybdenum)	ACGIH
		TWA	5 mg/m3 (Molybdenum)	OSHA P0
mica	12001-26-2	TWA (Respirable fraction)	3 mg/m3	ACGIH
		TWA (Dust)	20 Million particles per cubic foot	OSHA Z-3
		TWA (Respirable)	3 mg/m3	NIOSH REL
		TWA (respirable dust fraction)	3 mg/m3	OSHA P0
		TWA (Respirable)	5 mg/m3	NIOSH REL
Trade Secret Silicon Compound	Not Assigned	TWA (total)	10 mg/m3	NIOSH REL
		TWA (total dust)	15 mg/m3	OSHA Z-1
		TWA (respirable fraction)	5 mg/m3	OSHA Z-1
		TWA (Total dust)	10 mg/m3	OSHA P0
		TWA (respirable dust fraction)	5 mg/m3	OSHA P0
Trade Secret Manganese	Not Assigned	C (Fumes)	5 mg/m3	OSHA Z-1

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Compound				
		TWA (Fumes)	1 mg/m3 (Manganese)	NIOSH REL
		ST (Fumes)	3 mg/m3 (Manganese)	NIOSH REL
		TWA (Fumes)	1 mg/m3 (Manganese)	OSHA P0
		STEL (Fumes)	3 mg/m3 (Manganese)	OSHA P0
		TWA (Inhalable fraction)	0.1 mg/m3 (Manganese)	ACGIH
		TWA (Respirable fraction)	0.02 mg/m3 (Manganese)	ACGIH
Silica, amorphous	112945-52-5	TWA (Dust)	20 Million particles per cubic foot (Silica)	OSHA Z-3
		TWA (Dust)	80 mg/m3 / %SiO2 (Silica)	OSHA Z-3
		TWA	6 mg/m3 (Silica)	NIOSH REL

Hazardous components without workplace control parameters

Components	CAS-No.
Trade Secret Boron Compound	Not Assigned

Engineering measures : Apply technical measures to comply with the occupational exposure limits.
Provide adequate ventilation.

Personal protective equipment

Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hand protection : For prolonged or repeated contact use protective gloves.

Eye protection : Safety glasses

Protective measures : Wear suitable protective equipment.
When using do not eat, drink or smoke.

Hygiene measures : Wash hands before breaks and immediately after handling the product.

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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: paste
Colour	: dark grey
Odour	: solvent-like
Odour Threshold	: No data available
Melting point/freezing point	: No data available
Boiling point/boiling range	: No data available
Flash point	: 14 °C Method: calculated
Upper explosion limit	: No data available
Lower explosion limit	: No data available
Relative vapour density	: No data available
Solubility(ies)	
Water solubility	: soluble
Auto-ignition temperature	: Not determined
Oxidizing properties	: No data available
Refractive index	: No data available
Volatile organic compounds (VOC) content	: The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489): This product does not contain any VOC exemptions listed under the U.S. Clean Air Act Section 450.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: The product is chemically stable.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
 inhalation (dust/mist/fume)
 Skin
 Eye contact

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Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

Components:

ethanol:

Acute oral toxicity : LD50 Oral (Rat): 10,470 mg/kg

Acute dermal toxicity : LD50 (Rabbit): 15,800 mg/kg

Trade Secret Molybdenum Compound:

Acute oral toxicity : LD50 (Rat, male and female): 4,461 mg/kg
Method: OECD Test Guideline 401
GLP: yes

Acute inhalation toxicity : LC50 (Rat, male and female): > 5,840 mg/m³
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Target Organs: Mucous membranes
GLP: yes
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: No adverse effect has been observed in acute toxicity tests.

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg
Method: OECD Test Guideline 402
GLP: yes
Assessment: The substance or mixture has no acute dermal toxicity

Trade Secret Silicon Compound:

Acute oral toxicity : LD50 Oral (Rat): 3,160 mg/kg

Trade Secret Manganese Compound:

Acute oral toxicity : LD50 Oral (Rat): 9 g/kg

Silica, amorphous:

Acute oral toxicity : LD50 Oral (Rat): 3,160 mg/kg

Trade Secret Boron Compound:

Acute oral toxicity : LD50 (Rat, female): > 300 mg/kg

Acute inhalation toxicity : LC50 (Rat, male and female): > 5.31 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

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1578 ppm
Method: ISO TC58

Skin corrosion/irritation

Not classified based on available information.

Components:

ethanol:

Species: Rabbit
Exposure time: 24 h
Method: OECD Test Guideline 404
Result: No skin irritation

Trade Secret Molybdenum Compound:

Species: Rabbit
Exposure time: 4 h
Assessment: No skin irritation
Method: OECD Test Guideline 404
Result: No skin irritation
GLP: yes

Serious eye damage/eye irritation

Causes serious eye irritation.

Components:

ethanol:

Species: Rabbit
Result: Eye irritation
Method: OECD Test Guideline 405

Trade Secret Molybdenum Compound:

Species: Rabbit
Result: Irritating to eyes.
Assessment: Irritating to eyes.

Trade Secret Silicon Compound:

Species: Rabbit
Result: Mild eye irritation
Method: Draize Test

Respiratory or skin sensitisation

Skin sensitisation: Not classified based on available information.
Respiratory sensitisation: Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed

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human carcinogen by IARC.

OSHA

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

No component 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 Specific Target Organ Toxicity - single exposure

Not classified based on available information.

Components:

Trade Secret Molybdenum Compound:

Assessment: May cause respiratory irritation.

STOT Specific Target Organ Toxicity - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

ethanol:

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia (water flea)): 9,268 mg/l
Exposure time: 48 h

Trade Secret Molybdenum Compound:

Toxicity to fish : (Oncorhynchus mykiss (rainbow trout)): 100 mg/l
Method: OECD Test Guideline 203
Remarks: No toxicity at the limit of solubility

(Pimephales promelas (fathead minnow)): 370 mg/l
Exposure time: 96 h
Remarks: No toxicity at the limit of solubility

Toxicity to daphnia and other aquatic invertebrates : (Daphnia magna (Water flea)): 100 mg/l
Exposure time: 24 h
Method: OECD Test Guideline 202
Remarks: No toxicity at the limit of solubility

(Daphnia magna (Water flea)): 100 mg/l

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Exposure time: 48 h
 Method: OECD Test Guideline 202
 Remarks: No toxicity at the limit of solubility

Trade Secret Boron Compound:

- Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 0.207 mg/l
 Exposure time: 96 h
 Test Type: semi-static test
- Toxicity to daphnia and other aquatic invertebrates : EC50: > 0.135 mg/l
 Exposure time: 48 h
 Test Type: static test
- Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (green algae)): > 1.35 mg/l
 Exposure time: 72 h
 Test Type: static test
- M-Factor (Acute aquatic toxicity) : 1

Persistence and degradability

Components:

ethanol:

Biodegradability : Remarks: No data available

Trade Secret Molybdenum Compound:

Biodegradability : Remarks: No data available

mica:

Biodegradability : Remarks: No data available

Trade Secret Silicon Compound:

Biodegradability : Remarks: No data available

Trade Secret Manganese Compound:

Biodegradability : Remarks: No data available

Silica, amorphous:

Biodegradability : Remarks: No data available

Bioaccumulative potential

Components:

ethanol:

Bioaccumulation : Remarks: No data available

Partition coefficient: n-octanol/water : log Pow: -0.349 (24 °C)

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Trade Secret Molybdenum Compound:

Bioaccumulation : Remarks: No data available

mica:

Bioaccumulation : Remarks: No data available

Trade Secret Silicon Compound:

Bioaccumulation : Remarks: No data available

Trade Secret Manganese Compound:

Bioaccumulation : Remarks: No data available

Silica, amorphous:

Bioaccumulation : Remarks: No data available

Mobility in soil

Components:

ethanol:

Distribution among environmental compartments : Remarks: No data available

Trade Secret Molybdenum Compound:

Distribution among environmental compartments : Remarks: No data available

mica:

Distribution among environmental compartments : Remarks: No data available

Trade Secret Silicon Compound:

Distribution among environmental compartments : Remarks: No data available

Trade Secret Manganese Compound:

Distribution among environmental compartments : Remarks: No data available

Silica, amorphous:

Distribution among environmental compartments : Remarks: No data available

Other adverse effects

Product:

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
 Remarks: 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 +

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SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of wastes in an approved waste disposal facility.

SECTION 14. TRANSPORT INFORMATION

IATA-DGR

UN number : UN 1170
 Proper shipping name : Ethanol solution
 Class : 3
 Packing group : II
 Labels : 3
 Packing instruction (cargo aircraft) : 364
 Packing instruction (passenger aircraft) : 353

IMDG-Code

UN number : UN 1170
 Proper shipping name : ETHANOL SOLUTION

 Class : 3
 Packing group : II
 Labels : 3
 EmS Code : F-E, S-D
 Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

UN number : UN 1170
 Proper shipping name : ETHANOL SOLUTIONS

 Class : 3
 Packing group : II
 Labels : 3
 ERG Code : 127
 Marine pollutant : no

SECTION 15. REGULATORY INFORMATION

TSCA list : TSCA_12b - Not relevant

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TSCA list : TSCA 5a - Not relevant

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

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Fire Hazard
Acute Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This product contains components that are reportable under the regulation.

Chromium III CompoundsCobalt,
inorganic compounds

Molybdenum trioxide

Manganese

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).

This product contains components that are reportable under the regulation.

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 contains components that are reportable under the regulation.

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 components that are reportable under the regulation.

Massachusetts Right To Know

This product contains components that are reportable under the regulation.

Pennsylvania Right To Know

This product contains components that are reportable under the regulation.

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New Jersey Right To Know

This product contains components that are reportable under the regulation.

California Prop 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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

- EINECS (European Union) : On the inventory, or in compliance with the inventory
- SWISS (Switzerland) : On the inventory, or in compliance with the inventory
- TSCA (United States) : On TSCA Inventory
- DSL/NDSL (Canada) : This product contains one or several components listed in the Canadian NDSL.
- AICS (Australia) : Not in compliance with the inventory
- NZioC (New Zealand) : Not in compliance with the inventory
- ENCS (Japan) : On the inventory, or in compliance with the inventory
- ISHL (Japan) : Not in compliance with the inventory
- KECI (Korea) : Not in compliance with the inventory
- PICCS (Philippines) : Not in compliance with the inventory
- IECSC (China) : On the inventory, or in compliance with the inventory
- TCSI (Taiwan) : Not in compliance with the inventory
- CICR (Turkey) : Not in compliance with the inventory

SECTION 16. OTHER INFORMATION

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The information provided in this 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.

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