

**Safety Data Sheet**

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: November 15, 2017

Revision: November 15, 2017

**1 Identification**

- **Product identifier**
- **Trade name:** Hard Coat 88, A-Side
- **Other means of identification:**  
88% solids polyaspartic.  
Standard blend.
- **Recommended use and restriction on use**
- **Recommended use:** High Solids Roll-Down Coating
- **Restrictions on use:** See Sections 8 and 10 for further information.
- **Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**  
Advanced Resins
- 11530 Chairman Dr, Dallas, TX 75243
- Phone: (972) 293.4444
- Email: hello@advancedresins.com

**2 Hazard(s) identification**

- **Classification of the substance or mixture**  
Acute Tox. 4 H332 Harmful if inhaled.  
Skin Sens. 1 H317 May cause an allergic skin reaction.  
STOT SE 3 H335 May cause respiratory irritation.

**Label elements****GHS label elements**

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

**Hazard pictograms:**

GHS07

- **Signal word:** Warning
- **Hazard statements:**  
H332 Harmful if inhaled.  
H317 May cause an allergic skin reaction.  
H335 May cause respiratory irritation.
- **Precautionary statements:**  
P261 Avoid breathing mist, vapors, or spray.  
P271 Use only outdoors or in a well-ventilated area.  
P272 Contaminated work clothing must not be allowed out of the workplace.

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P280 Wear protective gloves/protective clothing/eye protection.  
 P302+P352 If on skin: Wash with plenty of soap and water.  
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
 P312 Call a poison center/doctor if you feel unwell.  
 P333+P313 If skin irritation or rash occurs: Get medical advice/attention.  
 P363 Wash contaminated clothing before reuse.  
 P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
 P405 Store locked up.  
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**Other hazards**

0 % of the mixture consists of component(s) of unknown toxicity.  
 There are no other hazards not otherwise classified that have been identified.

### 3 Composition/information on ingredients

**Chemical characterization: Mixtures**

**Components:**

28182-81-2	HDI oligomers, isocyanurate ⚠ Acute Tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H335	60-80%
98-56-6	4-chloro- $\alpha,\alpha,\alpha$ -trifluorotoluene ⚠ Flam. Liq. 3, H226 ⚠ Skin Sens. 1B, H317	20-40%
822-06-0	hexamethylene-di-isocyanate ⚠ Acute Tox. 3, H311; Acute Tox. 1, H330 ⚠ Resp. Sens. 1, H334 ⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; STOT SE 3, H335	<0.5%

**Additional information:**

For the listed ingredient(s), the identity and/or exact percentage(s) are being withheld as a trade secret.  
 For the wording of the listed Hazard Statements, refer to section 16.

### 4 First-aid measures

**Description of first aid measures**

**After inhalation:**

Supply fresh air; consult doctor in case of complaints.  
 Provide oxygen treatment if affected person has difficulty breathing.  
 In case of unconsciousness place patient stably in side position for transportation.

**After skin contact:**

Do not pull solidified product away from the skin.  
 Immediately wash with water and soap and rinse thoroughly.  
 If skin irritation or rash occurs: Get medical advice/attention.

**After eye contact:**

Remove contact lenses if worn, if possible.  
 Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

**After swallowing:**

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Rinse out mouth and then drink plenty of water.

Do not induce vomiting; immediately call for medical help.

**· Most important symptoms and effects, both acute and delayed:**

Headache

Breathing difficulty

Coughing

Dizziness

Allergic reactions

Slight irritant effect on skin and mucous membranes.

Slight irritant effect on eyes.

Gastric or intestinal disorders when ingested.

Nausea in case of ingestion.

Vomiting.

Diarrhea.

Disorientation

**· Danger:**

Harmful if inhaled.

Danger of impaired breathing.

Danger of disturbed cardiac rhythm.

Danger of pneumonia.

May cause respiratory irritation.

**· Indication of any immediate medical attention and special treatment needed:**

Medical supervision for at least 48 hours.

If necessary oxygen respiration treatment.

Contains HDI oligomers, isocyanurate, hexamethylene-di-isocyanate, 4-chloro- $\alpha,\alpha,\alpha$ -trifluorotoluene. May produce an allergic reaction.

Treat skin and mucous membrane with antihistamine and corticoid preparations.

In cases of irritation to the lungs, initial treatment with corticoid steroid inhalants.

If medical advice is needed, have product container or label at hand.

**5 Fire-fighting measures****· Extinguishing media****· Suitable extinguishing agents:**CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray.

Water fog / haze

Foam

Fire-extinguishing powder

Carbon dioxide

Gaseous extinguishing agents

**· For safety reasons unsuitable extinguishing agents:** Water spray**· Special hazards arising from the substance or mixture**

During heating or in case of fire poisonous gases are produced.

**· Advice for firefighters****· Protective equipment:**

Wear self-contained respiratory protective device.

Wear fully protective suit.

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### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**

Use respiratory protective device against the effects of fumes/dust/aerosol.

Ensure adequate ventilation.

Use personal protective equipment as required.

Keep people at a distance and stay upwind.

- **Environmental precautions**

Do not allow to enter sewers/ surface or ground water.

Inform respective authorities in case of seepage into water course or sewage system.

- **Methods and material for containment and cleaning up**

Allow to solidify. Pick up mechanically.

Send for recovery or disposal in suitable receptacles.

- **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:**

Use only in well ventilated areas.

Open and handle receptacle with care.

Avoid breathing mist, vapors, or spray.

- **Information about protection against explosions and fires:**

Keep respiratory protective device available.

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

- **Storage**

- **Requirements to be met by storerooms and receptacles:**

Avoid storage near extreme heat, ignition sources or open flame.

- **Information about storage in one common storage facility:**

Store away from foodstuffs.

Do not store together with acids.

Store away from oxidizing agents.

- **Further information about storage conditions:** Store in cool, dry conditions in well sealed receptacles.

- **Specific end use(s)** No relevant information available.

### 8 Exposure controls/personal protection

- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

**822-06-0 hexamethylene-di-isocyanate**

REL (USA)

Long-term value: 0.035 mg/m<sup>3</sup>, 0.005 ppm

Ceiling limit value: 0.14\* mg/m<sup>3</sup>, 0.02\* ppm

\*10-min

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TLV (USA)	Long-term value: 0.034 mg/m <sup>3</sup> , 0.005 ppm BEI
EL (Canada)	Long-term value: 0.005 ppm Ceiling limit value: 0.01 ppm S
EV (Canada)	Long-term value: 0.005 ppm Ceiling limit value: 0.02 ppm
LMPE (Mexico)	Long-term value: 0.005 ppm

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

Wash hands before breaks and at the end of work.

· **Engineering controls:** Use only outdoors or in a well-ventilated area.

· **Breathing equipment:**



Combined Organic Vapor and Particulate Respirator is recommended for use during all processing activities.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

· **Eye protection:**



Safety glasses

· **Body protection:** Protective work clothing

· **Limitation and supervision of exposure into the environment**

Avoid release to the environment.

### 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **Appearance:**

**Form:** Viscous liquid.

**Color:** Light yellow

· **Odor:** Mild

· **Odor threshold:** Not determined.

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· <b>pH-value:</b>	Not determined.
· <b>Melting point/Melting range:</b>	Not determined.
· <b>Boiling point/Boiling range:</b>	>150 °C (>302 °F)
· <b>Flash point:</b>	>160 °C (>320 °F)
· <b>Flammability (solid, gaseous):</b>	Not applicable.
· <b>Auto-ignition temperature:</b>	Not determined.
· <b>Decomposition temperature:</b>	Not determined.
· <b>Danger of explosion:</b>	Product does not present an explosion hazard.
· <b>Explosion limits</b>	
Lower:	Not determined.
Upper:	Not determined.
· <b>Oxidizing properties:</b>	Non-oxidizing.
· <b>Vapor pressure:</b>	Not determined.
· <b>Density:</b>	
Relative density at 25 °C (77 °F):	1.13 g/cm <sup>3</sup> (9.43 lbs/gal)
Vapor density:	Not determined.
Evaporation rate:	Not determined.
· <b>Solubility in / Miscibility with Water:</b>	Slowly reacts with water. Not miscible or difficult to mix.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity</b>	
Dynamic:	800 cPs
Kinematic:	Not determined.
· <b>Other information</b>	No relevant information available.

### 10 Stability and reactivity

- **Reactivity:** No relevant information available.
- **Chemical stability:** Stable under normal temperatures and pressures.
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions**  
Reacts with oxidizing agents.  
Reacts with strong acids.  
Reacts with water.  
Contact with acids releases toxic gases.
- **Conditions to avoid**  
Avoid acids.  
Store away from oxidizing agents.  
Protect from humidity and water.
- **Incompatible materials**

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Strong acids  
Oxidizing agents  
· **Hazardous decomposition products**  
Carbon monoxide and carbon dioxide  
Nitrogen oxides (NO<sub>x</sub>)  
Hydrogen cyanide (prussic acid)  
Hydrogen chloride (HCl)  
Chlorine  
Hydrogen fluoride

### 11 Toxicological information

· **Information on toxicological effects**

· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

**28182-81-2 HDI oligomers, isocyanurate**

Oral	LD50	>5000 mg/kg (rat)
Dermal	LD50	>5000 mg/kg (rabbit)

**822-06-0 hexamethylene-di-isocyanate**

Oral	LD50	959 mg/kg (rat)
Dermal	LD50	593 mg/kg (rat)
Inhalative	LC50/4h	124 mg/l (rat)

· **Primary irritant effect:**

· **On the skin:** Slight irritant effect on skin and mucous membranes.

· **On the eye:** Slight irritant effect on eyes.

· **Sensitization:**

Contains HDI oligomers, isocyanurate, hexamethylene-di-isocyanate, 4-chloro- $\alpha,\alpha,\alpha$ -trifluorotoluene. May produce an allergic reaction.

· **IARC (International Agency for Research on Cancer):**

None of the ingredients are listed.

· **NTP (National Toxicology Program):**

None of the ingredients are listed.

· **OSHA-Ca (Occupational Safety & Health Administration):**

None of the ingredients are listed.

· **Probable route(s) of exposure:**

Ingestion.  
Inhalation.  
Eye contact.  
Skin contact.

· **Acute effects (acute toxicity, irritation and corrosivity):** Harmful if inhaled.

· **Repeated dose toxicity:** No relevant information available.

· **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.

· **Carcinogenicity:** Based on available data, the classification criteria are not met.

· **Reproductive toxicity:** Based on available data, the classification criteria are not met.

· **STOT-single exposure:** May cause respiratory irritation.

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- **STOT-repeated exposure:** Based on available data, the classification criteria are not met.
- **Aspiration hazard:** Based on available data, the classification criteria are not met.

### 12 Ecological information

- **Toxicity**
- **Aquatic toxicity**  
Toxic to aquatic life with long lasting effects.

**98-56-6 4-chloro- $\alpha,\alpha,\alpha$ -trifluorotoluene**

EC50 (dynamic) 3.0 mg/kg (zebra fish)

- **Persistence and degradability** No relevant information available.
- **Bioaccumulative potential:** No relevant information available.
- **Mobility in soil:** No relevant information available.
- **Additional ecological information**
- **General notes:** Do not allow product to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No relevant information available.

### 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Can be disposed of with household garbage after solidification following consultation with the waste disposal facility operator and the pertinent authorities and adhering to the necessary technical regulations. The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.
- **Uncleaned packagings**
- **Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

- **UN-Number**
- **DOT, ADR, IMDG, IATA** UN3082
- **UN proper shipping name**
- **DOT** Environmentally hazardous substances, liquid, n.o.s. (Chlorobenzotrifluorides)
- **ADR, IMDG** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CHLOROBENZOTRIFLUORIDES)
- **IATA** Environmentally hazardous substance, liquid, n.o.s. (Chlorobenzotrifluorides)

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· **Transport hazard class(es)**

· **DOT, IMDG, IATA**



· **Class**

9 Miscellaneous dangerous substances and articles

· **Label**

9

· **ADR**



· **Class**

9 (M6) Miscellaneous dangerous substances and articles

· **Label**

9

· **Packing group**

· **DOT, ADR, IMDG, IATA**

III

· **Environmental hazards**

Product contains environmentally hazardous substances: 4-chloro- $\alpha,\alpha,\alpha$ -trifluorotoluene

· **Marine pollutant:**

Yes (DOT)  
Symbol (fish and tree)

· **Special precautions for user**

Warning: Miscellaneous dangerous substances and articles

· **Danger code (Kemler):**

90

· **EMS Number:**

F-A,S-F

· **Segregation groups**

Liquid halogenated hydrocarbons

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

· **Transport/Additional information:**

Not regulated when carried in single or combination packaging containing a net quantity of 5 L or less for liquids or 5 kg or less for solids per the following:  
DOT: 171.4(c)(2)  
ADR: SP 375  
IMDG: 2.10.2.7  
IATA: special provision A197

· **DOT**

· **Remarks:**

Transport labeling is not required for non-bulk single package shipments by motor vehicle, rail car or aircraft. Bulk packaging consists of a maximum capacity of greater than 450L (119 gallons) for a liquid and a maximum net mass greater than 400kg (882 pounds) for a solid.

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**15 Regulatory information**

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **United States (USA)**
- **SARA**

· **Section 302 (extremely hazardous substances):**

None of the ingredients are listed.

· **Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients are listed.

· **TSCA (Toxic Substances Control Act)**

All ingredients are listed.

· **Proposition 65 (California)**

· **Chemicals known to cause cancer:**

None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency):**

None of the ingredients are listed.

· **IARC (International Agency for Research on Cancer):**

None of the ingredients are listed.

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

None of the ingredients are listed.

· **Canadian Domestic Substances List (DSL):**

All ingredients are listed.

**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** November 15, 2017 / -

· **Abbreviations and acronyms:**

LDLo: Lowest Lethal Dose Observed

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Code for Dangerous Goods

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DOT: US Department of Transportation  
IATA: International Air Transport Association  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
PBT: Persistent, Bio-accumulable, Toxique  
vPvB: very Persistent and very Bioaccumulative  
NIOSH: National Institute for Occupational Safety and Health  
OSHA: Occupational Safety & Health Administration  
Flam. Liq. 3: Flammable liquids – Category 3  
Acute Tox. 3: Acute toxicity – Category 3  
Acute Tox. 1: Acute toxicity – Category 1  
Acute Tox. 4: Acute toxicity – Category 4  
Skin Irrit. 2: Skin corrosion/irritation – Category 2  
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A  
Resp. Sens. 1: Respiratory sensitisation – Category 1  
Skin Sens. 1: Skin sensitisation – Category 1  
Skin Sens. 1B: Skin sensitisation – Category 1B  
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

**Sources**

Website, European Chemicals Agency (echa.europa.eu)  
Website, US EPA Substance Registry Services (ofmpub.epa.gov/sor internet/registry/substreg/home/overview/home.do)  
Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org)  
Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 978-0-470-07488-6  
Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaasen, Curtis D., ed., ISBN: 978-0-07-176923-5.  
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