

## Safety Data Sheet acc. to OSHA HCS

Printing date 06/16/2015

Reviewed on 06/16/2015

### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

- **Product identifier**
- **Product name:** CRU Part B
- **Product Code:** SA107
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Northern Surface Armor  
8140 W 350 N  
ANGOLA, IN 46703  
USA
- **Information department:** Product safety department
- **Emergency telephone number:** During normal opening times: +1 (260) 665-8431

### SECTION 2: HAZARDS IDENTIFICATION

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 3 H226 Flammable liquid and vapor.



GHS07

Acute Tox. 4 H332 Harmful if inhaled.

Skin Irrit. 2 H315 Causes skin irritation.

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**



GHS02 GHS07

- **Signal word** Warning
- **Hazard-determining components of labeling:**  
Methyl n-amyl ketone  
Hexamethylene Diisocyanate Homopolymer  
n-butyl acetate



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- **Hazard statements**

Flammable liquid and vapor.

Harmful if inhaled.

Causes skin irritation.

May cause respiratory irritation.

- **Precautionary statements**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Use explosion-proof electrical/ventilating/lighting/equipment.

Avoid breathing dust/fume/gas/mist/vapors/spray

Wear protective gloves / eye protection / face protection.

Wear protective gloves.

Ground/bond container and receiving equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Wash thoroughly after handling.

Use only outdoors or in a well-ventilated area.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

Specific treatment (see on this label).

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Call a poison center/doctor if you feel unwell.

If skin irritation occurs: Get medical advice/attention.

In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.

Take off contaminated clothing and wash it before reuse.

Store locked up.

Store in a well-ventilated place. Keep container tightly closed.

Store in a well-ventilated place. Keep cool.

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

- **Classification system:**

- **NFPA ratings (scale 0 - 4)**



Health = 1

Fire = 3

Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



Health = 2

Fire = 3

Reactivity = 0

- **Other hazards**

- **Results of PBT and vPvB assessment**

• **PBT:** Not applicable.

• **vPvB:** Not applicable.

## SECTION 3: COMPOSITION/INFORMATION INGREDIENTS

- **Chemical characterization: Mixtures**

• **Description:** Mixture of the substances listed below with nonhazardous additions.

- **Dangerous components:**

28182-81-2	Hexamethylene Diisocyanate Homopolymer	75.71%
123-86-4	n-butyl acetate	12.03%

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110-43-0	Methyl n-amyl ketone	12.03%
822-06-0	hexamethylene-di-isocyanate	0.23%

## SECTION 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.
- **After swallowing:** If symptoms persist consult 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**

## 5 Fire-fighting measures

## SECTION 5: FIRE-FIGHTING MEASURES

- **Extinguishing media**
- **Suitable extinguishing agents:** CO<sub>2</sub>, 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.

## SECTION 6: RELEASE MEASURES

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** 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.



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## SECTION 7: HANDLING & STORAGE

- **Handling:**
- **Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Prevent formation of aerosols.
- **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**

· <b>Components with limit values that require monitoring at the workplace:</b>	
<b>123-86-4 n-butyl acetate</b>	
PEL	Long-term value: 710 mg/m <sup>3</sup> , 150ppm
REL	Short-term value: 950 mg/m <sup>3</sup> , 200ppm Long-term value: 710 mg/m <sup>3</sup> , 150ppm
TLV	Short-term value: 950 mg/m <sup>3</sup> , 200ppm Long-term value: 713 mg/m <sup>3</sup> , 150ppm
<b>110-43-0 Methyl n-amyl ketone</b>	
PEL	Long-term value: 465 mg/m <sup>3</sup> , 100ppm
REL	Long-term value: 465 mg/m <sup>3</sup> , 100ppm
TLV	Long-term value: 233 mg/m <sup>3</sup> , 50ppm
<b>822-06-0 hexamethylene-di-isocyanate</b>	
REL	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
TLV	Long-term value: 0.034 mg/m <sup>3</sup> , 0.005ppm NIC-BEI

- **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.  
Avoid contact with the skin.  
Avoid contact with the eyes and skin.

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- **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.*
- **Penetration time of glove material**  
*The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.*
- **Eye protection:**



Tightly sealed goggles

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

· <b>Information on basic physical and chemical properties</b>	
· <b>General Information</b>	
· <b>Appearance:</b>	
<b>Form:</b>	Liquid
<b>Color:</b>	Transparent
· <b>Odor:</b>	Solvent-like
· <b>Odour threshold:</b>	Not determined.
· <b>pH-value:</b>	Not determined.
· <b>Change in condition</b>	
<b>Melting point/Melting range:</b>	Undetermined.
<b>Boiling point/Boiling range:</b>	124 °C (255 °F)
· <b>Flash point:</b>	27 °C (81 °F)
· <b>Flammability (solid, gaseous):</b>	Not applicable.
· <b>Ignition temperature:</b>	370 °C (698 °F)
· <b>Decomposition temperature:</b>	Not determined.
· <b>Auto igniting:</b>	Product is not selfigniting.
· <b>Danger of explosion:</b>	Product is not explosive. However, formation of explosive air/ vapor mixtures are possible.

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· <b>Explosion limits:</b>	
<b>Lower:</b>	1.0 Vol %
<b>Upper:</b>	7.5 Vol %
· <b>Vapor pressure at 20 °C (68 °F):</b>	10.7 hPa (8 mm Hg)
· <b>Density at 20 °C (68 °F):</b>	1.039 g/cm <sup>3</sup> (8.67 lbs/gal)
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with Water:</b>	Miscible
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	24.1 %
<b>VOC content:</b>	24.1 %
	250.0 g/l / 2.09 lb/gl
<b>Solids content:</b>	75.7 %
· <b>Other information</b>	No further relevant information available.

## SECTION 10: STABILITY AND REACTIVITY

- **Reactivity**
- **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.

## SECTION 11: TOXICOLOGICAL INFORMATION

- **Information on toxicological effects**
- **Acute toxicity:**

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

**28182-81-2 Hexamethylene Diisocyanate Homopolymer**

Oral	LD50	>5000 mg/kg (rat)
Inhalative	LC50/4 h	.554 mg/l (rat)

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

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- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful  
Irritant

- **Carcinogenic categories**

· <b>IARC (International Agency for Research on Cancer)</b>
None of the ingredients is listed.
· <b>NTP (National Toxicology Program)</b>
None of the ingredients is listed.
· <b>OSHA-Ca (Occupational Safety &amp; Health Administration)</b>
None of the ingredients is listed.

## SECTION 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.

- **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.

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

**13 Disposal considerations** No further relevant information available.

## SECTION 13: WASTE DISPOSAL

- **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.

## SECTION 14: TRANSPORT INFORMATION

- **UN-Number**

- **DOT, IMDG,**

UN292

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<ul style="list-style-type: none"> <li>· <b>UN proper shipping name</b></li> <li>· <b>DOT</b></li> <li>· <b>IMDG, IATA</b></li> </ul>	<p>Toxic liquids, flammable, organic, n.o.s. (hexamethylene-di-isocyanate, Butyl acetates)</p> <p>TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S. (hexamethylene-di-isocyanate, BUTYL ACETATES)</p>
<ul style="list-style-type: none"> <li>· <b>Transport hazard class(es)</b></li> <li>· <b>DOT</b></li> </ul> <div style="display: flex; align-items: center; gap: 10px;">   </div> <ul style="list-style-type: none"> <li>· <b>Class</b></li> <li>· <b>Label</b></li> </ul>	<p>6.1 Toxic substances</p> <p>6.1, 3</p>
<ul style="list-style-type: none"> <li>· <b>IMDG</b></li> </ul> <div style="display: flex; align-items: center; gap: 10px;">   </div> <ul style="list-style-type: none"> <li>· <b>Class</b></li> <li>· <b>Label</b></li> </ul>	<p>6.1 Toxic substances</p> <p>6.1/3</p>
<ul style="list-style-type: none"> <li>· <b>IATA</b></li> </ul> <div style="display: flex; align-items: center; gap: 10px;">   </div> <ul style="list-style-type: none"> <li>· <b>Class</b></li> <li>· <b>Label</b></li> </ul>	<p>6.1 Toxic substances</p> <p>6.1 (3)</p>
<ul style="list-style-type: none"> <li>· <b>Packing group</b></li> <li>· <b>DOT, IMDG, IATA</b></li> </ul>	<p>II</p>
<ul style="list-style-type: none"> <li>· <b>Environmental hazards:</b></li> <li>· <b>Marine pollutant:</b></li> </ul>	<p>No</p>
<ul style="list-style-type: none"> <li>· <b>Special precautions for user</b></li> <li>· <b>Danger code (Kemler):</b></li> <li>· <b>EMS Number:</b></li> </ul>	<p>Warning: Toxic substances</p> <p>63</p> <p>F-E,S-D</p>
<ul style="list-style-type: none"> <li>· <b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b></li> </ul>	<p>Not applicable.</p>
<ul style="list-style-type: none"> <li>· <b>Transport/Additional information:</b></li> <li>· <b>DOT</b></li> <li>· <b>Quantity limitations</b></li> </ul>	<p>On passenger aircraft/rail: 5 L</p> <p>On cargo aircraft only: 60 L</p>
<ul style="list-style-type: none"> <li>· <b>IMDG</b></li> <li>· <b>Limited quantities (LQ)</b></li> </ul>	<p>100 ml</p>

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· <b>Excepted quantities (EQ)</b>	Code: E4 Maximum net quantity per inner packaging: 1 ml Maximum net quantity per outer packaging: 500 ml
· <b>UN "Model Regulation":</b>	UN2929, Toxic liquids, flammable, organic, n.o.s. (hexamethylene-di-isocyanate, Butyl acetates), 6.1 (3), II

## SECTION 15: REGULATORY INFORMATION

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara

· <b>Section 355 (extremely hazardous substances):</b>	None of the ingredients is listed.
· <b>Section 313 (Specific toxic chemical listings):</b>	822-06-0   hexamethylene-di-isocyanate
· <b>TSCA (Toxic Substances Control Act):</b>	All ingredients are listed.
· <b>Proposition 65</b>	
· <b>Chemicals known to cause cancer:</b>	None of the ingredients is listed.
· <b>Chemicals known to cause reproductive toxicity for females:</b>	None of the ingredients is listed.
· <b>Chemicals known to cause reproductive toxicity for males:</b>	None of the ingredients is listed.
· <b>Chemicals known to cause developmental toxicity:</b>	None of the ingredients is listed.
· <b>Carcinogenic categories</b>	
· <b>EPA (Environmental Protection Agency)</b>	None of the ingredients is listed.
· <b>TLV (Threshold Limit Value established by ACGIH)</b>	None of the ingredients is listed.
· <b>NIOSH-Ca (National Institute for Occupational Safety and Health)</b>	None of the ingredients is listed.

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



GHS02 GHS07

- **Signal word** Warning
- **Hazard-determining components of labeling:**  
Methyl n-amyI ketone  
Hexamethylene Diisocyanate Homopolymer

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*n*-butyl acetate

• **Hazard statements**

*Flammable liquid and vapor.*

*Harmful if inhaled.*

*Causes skin irritation.*

*May cause respiratory irritation.*

• **Precautionary statements**

*Keep away from heat/sparks/open flames/hot surfaces. - No smoking.*

*Use explosion-proof electrical/ventilating/lighting/equipment.*

*Avoid breathing dust/fume/gas/mist/vapors/spray*

*Wear protective gloves / eye protection / face protection.*

*Wear protective gloves.*

*Ground/bond container and receiving equipment.*

*Use only non-sparking tools.*

*Take precautionary measures against static discharge.*

*Wash thoroughly after handling.*

*Use only outdoors or in a well-ventilated area.*

*IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/ shower.*

*Specific treatment (see on this label).*

*IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.*

*Call a poison center/doctor if you feel unwell.*

*If skin irritation occurs: Get medical advice/attention.*

*In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.*

*Take off contaminated clothing and wash it before reuse.*

*Store locked up.*

*Store in a well-ventilated place. Keep container tightly closed.*

*Store in a well-ventilated place. Keep cool.*

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

• **Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.*

## SECTION 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.*

• **Department issuing SDS:** *Environment protection department.*

• **Contact:** *Mr. Williams*

• **Date of preparation / last revision** *06/16/2015 / -*

• **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)*

*HMS: Hazardous Materials Identification System (USA)*

*VOC: Volatile Organic Compounds (USA, EU)*

*LC50: Lethal concentration, 50 percent*

*LD50: Lethal dose, 50 percent*

*Flam. Liq. 3: Flammable liquids, Hazard Category 3*

*Acute Tox. 4: Acute toxicity, Hazard Category 4*

*Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2*

*STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3*