



Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: 01/20/2016

Revision: 01/20/2016

1 Identification

- **Product identifier**
- **Trade name:** ARMOUR PLATE
- **Article number:** DAC112
- **Recommended use and restriction on use**
- **Recommended use:** Mold Release Agent.
- **Restrictions on use:** No relevant information available.
- **Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**
DAC Industries, Inc.
1636 Gervais Avenue Suite 9
Maplewood, MN 55109
Phone: (651) 748-1750
- **Emergency telephone number:**
ChemTel Inc.
+1 (800)255-3924, +1 (813)248-0585

2 Hazard(s) identification

- **Classification of the substance or mixture**

Flam. Aerosol 1	H222	Extremely flammable aerosol.
Press. Gas	H280	Contains gas under pressure; may explode if heated.
Skin Irrit. 2	H315	Causes skin irritation.
Repr. 2	H361	Suspected of damaging fertility or the unborn child.
STOT SE 3	H336	May cause drowsiness or dizziness.
STOT RE 2	H373	May cause damage to the nervous system through prolonged or repeated exposure. Route of exposure: Inhalation.
Asp. Tox. 1	H304	May be fatal if swallowed and enters airways.

- **Label elements**

- **GHS label elements**

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

- **Hazard pictograms:**



GHS02 GHS04 GHS07 GHS08

- **Signal word:** Danger
- **Hazard-determining components of labeling:**
n-hexane
- **Hazard statements:**
H222 Extremely flammable aerosol.
H280 Contains gas under pressure; may explode if heated.
H315 Causes skin irritation.
H361 Suspected of damaging fertility or the unborn child.

(Cont'd. on page 2)

Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: 01/20/2016

Revision: 01/20/2016

Trade name: ARMOUR PLATE

(Cont'd. of page 1)

H336 May cause drowsiness or dizziness.

H373 May cause damage to the nervous system through prolonged or repeated exposure. Route of exposure: Inhalation.

H304 May be fatal if swallowed and enters airways.

· **Precautionary statements:**

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P251 Pressurized container: Do not pierce or burn, even after use.

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P211 Do not spray on an open flame or other ignition source.

P264 Wash face, hands, and any exposed skin thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P271 Use only outdoors or in a well-ventilated area.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P321 Specific treatment (see on this label).

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.

P332+P313 If skin irritation occurs: Get medical advice/attention.

P331 Do NOT induce vomiting.

P308+P313 IF exposed or concerned: Get medical advice/attention.

P362+P364 Take off contaminated clothing and wash it before reuse.

P405 Store locked up.

P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system**

· **NFPA ratings (scale 0 - 4)**



Health = 2

Fire = 4

Reactivity = 3

· **HMIS-ratings (scale 0 - 4)**



HEALTH 2 Health = *2

FIRE 4 Fire = 4

REACTIVITY 3 Reactivity = 3

· **Other hazards** There are no other hazards not otherwise classified that have been identified.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Dangerous components:**

(Cont'd. on page 3)

Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: 01/20/2016

Revision: 01/20/2016

Trade name: ARMOUR PLATE

(Cont'd. of page 2)

68476-86-8	Petroleum gases, liquefied, (Nota K, -R45, R46, <0.1% 1,3-butadiene buta-1,3-diene) ⚠ Flam. Gas 1, H220 ⚠ Press. Gas, H280	60-80%
110-54-3	n-hexane ⚠ Flam. Liq. 2, H225 ⚠ Repr. 2, H361; STOT RE 2, H373; Asp. Tox. 1, H304 ⚠ Skin Irrit. 2, H315; STOT SE 3, H336	10-20%
64742-89-8	Solvent naphtha (petroleum), light aliph. ⚠ Asp. Tox. 1, H304	0.1-1%

- **Additional information:**

For the listed ingredient(s), the identity and 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**

- **General information:**

Immediately remove any clothing soiled by the product.
 Take affected persons out into the fresh air.

- **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:**

Immediately wash with water and soap and rinse thoroughly.
 In cases of frostbite, rinse with plenty of water. Do not remove clothing.
 If skin irritation continues, consult a doctor.

- **After eye contact:**

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

- **After swallowing:**

Unlikely route of exposure.
 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
 Frostbite
 Disorientation

- **Danger:**

Danger of impaired breathing.
 Danger of pulmonary edema.
 Danger of pneumonia.
 Vapors have narcotic effect.

(Cont'd. on page 4)

Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: 01/20/2016

Revision: 01/20/2016

Trade name: ARMOUR PLATE

(Cont'd. of page 3)

Danger of convulsion.
 Danger of disturbed cardiac rhythm.
 Condition may deteriorate with alcohol consumption.

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

Medical supervision for at least 48 hours.
 Later observation for pneumonia and pulmonary edema.
 If necessary oxygen respiration treatment.
 Treat frost-bitten areas appropriately.

5 Fire-fighting measures

· **Extinguishing media**

· **Suitable extinguishing agents:**

Alcohol resistant foam
 Fire-extinguishing powder
 Gaseous extinguishing agents
 Carbon dioxide

· **For safety reasons unsuitable extinguishing agents:** Water

· **Special hazards arising from the substance or mixture**

Formation of toxic gases is possible during heating or in case of fire.
 Danger of receptacles bursting because of high vapor pressure if heated.
 Can form explosive gas-air mixtures.

· **Advice for firefighters**

· **Protective equipment:**

Wear self-contained respiratory protective device.
 Wear fully protective suit.

· **Additional information:**

Eliminate all ignition sources if safe to do so.
 Cool endangered receptacles with water fog.
 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

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.
 Wear protective equipment. Keep unprotected persons away.
 Keep away from ignition sources.
 Protect from heat.

· **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 evaporate.
 Absorb with non-combustible liquid-binding material (sand, diatomite, acid binders, universal binders).
 Dispose contaminated material as waste according to item 13.
 Send for recovery or disposal in suitable receptacles.

(Cont'd. on page 5)

Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: 01/20/2016

Revision: 01/20/2016

Trade name: **ARMOUR PLATE**

(Cont'd. of page 4)

- **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:**

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Avoid splashes or spray in enclosed areas.

Keep away from heat and direct sunlight.

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

Do not spray on a naked flame or any incandescent material.

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Pressurized container: protect from sunlight and do not expose to temperatures exceeding 120 °F / 49 °C, i.e. electric lights. Do not pierce or burn, even after use.

Emergency cooling must be available in case of nearby fire.

Keep respiratory protective device available.

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

- **Storage**

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

Store in a cool location.

Observe official regulations on storing packagings with pressurized containers.

Provide ventilation for receptacles.

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

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

Store away from foodstuffs.

Store away from oxidizing agents.

- **Further information about storage conditions:**

Store in a cool place. Heat will increase pressure and may lead to the receptacle bursting.

Keep containers tightly sealed.

Protect from heat and direct sunlight.

Storage Temperatures : < 122 F / < 50 C.

- **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:**

110-54-3 n-hexane

PEL (USA)

Long-term value: 1800 mg/m³, 500 ppm

(Cont'd. on page 6)

Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: 01/20/2016

Revision: 01/20/2016

Trade name: ARMOUR PLATE

(Cont'd. of page 5)

REL (USA)	Long-term value: 180 mg/m ³ , 50 ppm
TLV (USA)	Long-term value: 176 mg/m ³ , 50 ppm Skin; BEI
EL (Canada)	Long-term value: 20 ppm Skin
EV (Canada)	Long-term value: 176 mg/m ³ , 50 ppm
LMPE (Mexico)	Long-term value: 50 ppm PIEL, IBE

· Ingredients with biological limit values:
110-54-3 n-hexane

BEI (USA)	0.4 mg/L Medium: urine Time: end of shift at end of workweek Parameter: 2.5-Hexanedione without hydrolysis
-----------	---

· 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.

Wash hands before breaks and at the end of work.

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

· Engineering controls: No relevant information available.

· Breathing equipment:

Wear appropriate NIOSH respirator when ventilation is inadequate and occupational exposure limits are exceeded.

· 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.

(Cont'd. on page 7)

Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: 01/20/2016

Revision: 01/20/2016

Trade name: **ARMOUR PLATE**

(Cont'd. of page 6)

· **Eye protection:**

Safety glasses

· **Body protection:**

Not required under normal conditions of use.
Protection may be required for spills.

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

Avoid release to the environment.

· **Risk management measures**

See Section 7 for additional information.
No relevant information available.

9 Physical and chemical properties

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

Form: Aerosol

Color: Clear

· **Odor:** Mild

· **Odor threshold:** Not determined.

· **pH-value:** Not determined.

· **Melting point/Melting range:** Not determined.

· **Boiling point/Boiling range:** Not applicable, as aerosol.

· **Flash point:** -91 °C (-132 °F) (Based on propellant)

· **Flammability (solid, gaseous):** Not applicable.

· **Auto-ignition temperature:** Not determined.

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Product is not self-igniting.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

· **Explosion limits**

Lower: 1.1 Vol %

Upper: 10.9 Vol %

· **Oxidizing properties:** Non-oxidizing.

· **Vapor pressure at 20 °C (68 °F):** 8300 hPa (6226 mm Hg) (in can)

· **Density at 20 °C (68 °F):** 0.95 g/cm³ (7.928 lbs/gal)

· **Relative density:** Not determined.

· **Vapor density:** Not determined.

· **Evaporation rate:** Not applicable.

(Cont'd. on page 8)

Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: 01/20/2016

Revision: 01/20/2016

Trade name: ARMOUR PLATE

(Cont'd. of page 7)

- | | |
|---|------------------------------------|
| · Solubility in / Miscibility with Water: | Not miscible or difficult to mix. |
| · Partition coefficient (n-octanol/water): | Not determined. |
| · Viscosity | |
| Dynamic: | Not determined. |
| Kinematic: | Not determined. |
| · Other information | No relevant information available. |

10 Stability and reactivity

- **Reactivity:** No relevant information available.
- **Chemical stability:**
- **Thermal decomposition / conditions to be avoided:**
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- **Possibility of hazardous reactions:**
Extremely flammable aerosol.
Can react violently with oxygen rich (oxidizing) material. Danger of Explosion.
Develops readily flammable gases / fumes.
Danger of receptacles bursting because of high vapor pressure if heated.
Can form explosive mixtures in air if heated above flash point and/or when sprayed or atomized.
Used empty containers may contain product gases which form explosive mixtures with air.
- **Conditions to avoid:**
Keep ignition sources away - Do not smoke.
Store away from oxidizing agents.
- **Incompatible materials:** Oxidizing agents
- **Hazardous decomposition products:** Carbon monoxide and carbon dioxide

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:** None.
- **Primary irritant effect:**
- **On the skin:** Irritant to skin and mucous membranes.
- **On the eye:** Based on available data, the classification criteria are not met.
- **Sensitization:** Based on available data, the classification criteria are not met.
- **Carcinogenic categories**

· IARC (International Agency for Research on Cancer):		
9002-84-0	Polytetrafluoroethylene	3
493-52-7	2-(4-dimethylaminophenylazo)benzoic acid	3

· NTP (National Toxicology Program):
None of the ingredients are listed.

(Cont'd. on page 9)

Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: 01/20/2016

Revision: 01/20/2016

Trade name: ARMOUR PLATE

(Cont'd. of page 8)

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

None of the ingredients are listed.

- **Probable route(s) of exposure:**

- Inhalation.
- Eye contact.
- Skin contact.

- **Acute effects (acute toxicity, irritation and corrosivity):**

- Vapors have narcotic effect.
- May cause drowsiness or dizziness.
- Irritating to skin.

- **Repeated dose toxicity:**

- May cause damage to the nervous system through prolonged or repeated exposure. Route of exposure: Inhalation.
- Possible risk of irreversible effects.

- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

- Repr. 2

- **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:** Suspected of damaging fertility or the unborn child.

- **STOT-single exposure:** May cause drowsiness or dizziness.

- **STOT-repeated exposure:**

- May cause damage to the nervous system through prolonged or repeated exposure. Route of exposure: Inhalation.

- **Aspiration hazard:** May be fatal if swallowed and enters airways.

12 Ecological information

- **Toxicity**

- **Aquatic toxicity** The product contains materials that are harmful to the environment.

- **Persistence and degradability** Moderately /partly biodegradable

- **Bioaccumulative potential:** No relevant information available.

- **Mobility in soil:** No relevant information available.

- **Ecotoxicological effects:**

- **Remark:**

- Harmful to fish

- The product is oxygen-consuming. The declared action may be partly caused by lack of oxygen.

- **Additional ecological information**

- **General notes:**

- This statement was deduced from the properties of the single components.

- Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- Due to available data on eliminability/decomposition and bioaccumulation potential prolonged term damage of the environment can not be excluded.

- **Other adverse effects:** No relevant information available.

(Cont'd. on page 10)

Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: 01/20/2016

Revision: 01/20/2016

Trade name: ARMOUR PLATE

(Cont'd. of page 9)

13 Disposal considerations

- **Waste treatment methods**

- **Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system. Can be burned with household garbage after consulting 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. Residual materials should be treated as hazardous.

- **Uncleaned packagings**

- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- **UN-Number**

- DOT, ADR, IMDG, IATA

UN1950

- **UN proper shipping name**

- DOT

Aerosols, flammable

- ADR

1950 AEROSOLS, ENVIRONMENTALLY HAZARDOUS

- IMDG

AEROSOLS (HEPTANES), MARINE POLLUTANT

- IATA

AEROSOLS, flammable

- **Transport hazard class(es)**

- DOT



- Class

2.1

- Label

2.1

- ADR



- Class

2 5F Gases

- Label

2.1

- IMDG, IATA



- Class

2.1

(Cont'd. on page 11)

Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: 01/20/2016

Revision: 01/20/2016

Trade name: **ARMOUR PLATE**

(Cont'd. of page 10)

· Label	2.1
· Packing group	
· DOT, ADR, IMDG, IATA	Not regulated.
· Environmental hazards	
· Marine pollutant:	No
· Special precautions for user	Warning: Gases
· Danger code (Kemler):	-
· EMS Number:	F-D,S-U
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.

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 304 (emergency release notification):**

None of the ingredients are listed.

- **Sections 311/312 (hazardous chemical threshold planning quantity in pounds):**

None of the ingredients are listed.

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

None of the ingredients are listed.

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

110-54-3 | n-hexane

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

All ingredients are listed.

- **Proposition 65 (California)**

- **Chemicals known to cause cancer:**

100-41-4 | ethylbenzene

- **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.

(Cont'd. on page 12)

Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: 01/20/2016

Revision: 01/20/2016

Trade name: ARMOUR PLATE

(Cont'd. of page 11)

- **Carcinogenic categories**

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

110-54-3	n-hexane	II
----------	----------	----

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

9002-84-0	Polytetrafluoroethylene	3
493-52-7	2-(4-dimethylaminophenylazo)benzoic acid	3

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

None of the ingredients are listed.

- **Canadian substance listings**

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

All ingredients are listed.

- **Canadian Ingredient Disclosure list (limit 0.1%):**

None of the ingredients are listed.

- **Canadian Ingredient Disclosure list (limit 1%):**

110-54-3	n-hexane
----------	----------

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** 01/20/2016 / -

- **Abbreviations and acronyms:**

ADR: 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
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 NFPA: National Fire Protection Association (USA)
 HMIS: Hazardous Materials Identification System (USA)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 NIOSH: National Institute for Occupational Safety
 OSHA: Occupational Safety & Health
 TLV: Threshold Limit Value
 PEL: Permissible Exposure Limit
 REL: Recommended Exposure Limit
 BEI: Biological Exposure Limit
 Flam. Gas 1: Flammable gases, Hazard Category 1
 Flam. Aerosol 1: Flammable aerosols, Hazard Category 1
 Press. Gas: Gases under pressure: Compressed gas
 Flam. Liq. 2: Flammable liquids, Hazard Category 2
 Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
 Repr. 2: Reproductive toxicity, Hazard Category 2
 STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3
 STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2
 Asp. Tox. 1: Aspiration hazard, Hazard Category 1

- **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)

(Cont'd. on page 13)

Safety Data Sheet
acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: 01/20/2016

Revision: 01/20/2016

Trade name: ARMOUR PLATE

(Cont'd. of page 12)

Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org)
Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 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.

Safety Data Sheets, Individual Manufacturers

SDS Prepared by:

ChemTel Inc.

1305 North Florida Avenue

Tampa, Florida USA 33602-2902

Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573

Website: www.chemtelinc.com