

SAFETY DATA SHEET

V3X4B01U0P

Section 1. Identification

GHS product identifier : ARROWSTAR® CT P-8001 SILVER
Product type : Liquid.
SDS # : b6lk:u24k:8j8

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

Printing ink or additive.

Uses advised against	Reason
Not applicable.	

Supplier's details : Flint Group
14909 N. Beck Road
Plymouth, MI 48170
United States

Emergency telephone number (with hours of operation) : For Product Questions during business hours call (585) 458-1223
For Health and Safety Questions during business hours call (734) 781-4600
24 Hour Emergency Spill Contact call: (800) 424-9300 Chemtrec (US/Canada)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : SKIN SENSITIZATION - Category 1

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : May cause an allergic skin reaction.

Precautionary statements

Prevention : Wear protective gloves. Avoid breathing vapor. Contaminated work clothing must not be allowed out of the workplace.

Response : IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention.

Storage : Not applicable.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	%	CAS number
Aluminium powder (stabilized)	7 - 13	7429-90-5
EU: Hydrocarbons, C16-C20, n-alkanes, isoalkanes, cyclics, <2% aromatics, no CAS number	7 - 13	64741-91-9
copper	5 - 10	7440-50-8
Distillates (petroleum), acid-treated middle	3 - 7	64742-13-8
Distillates (petroleum), acid-treated middle	1 - 5	64742-13-8
Fatty acids, tall-oil, cobalt salts	.1 - 1	61789-52-4

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : May cause an allergic skin reaction.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.

Section 4. First aid measures

- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Section 6. Accidental release measures

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Aluminium powder (stabilized)	<p>OSHA PEL 1989 (United States, 3/1989). Notes: as Al TWA: 15 mg/m³, (as Al) 8 hours. Form: Dust TWA: 5 mg/m³, (as Al) 8 hours. Form: Pyrophoric TWA: 5 mg/m³, (as Al) 8 hours. Form: Respirable fraction TWA: 5 mg/m³, (as Al) 8 hours. Form: Welding fume</p> <p>OSHA PEL (United States, 6/2016). Notes: as Al TWA: 15 mg/m³, (as Al) 8 hours. Form: Total dust</p> <p>NIOSH REL (United States, 10/2013). TWA: 5 mg/m³ 10 hours. Form: Respirable fraction TWA: 10 mg/m³ 10 hours. Form: Total</p>

Section 8. Exposure controls/personal protection

- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid.
- Color** : metallic (silver, gold)
- Odor** : Not available.
- Odor threshold** : Not available.
- pH** : Not available.
- Melt point/Freeze point** : Not available.
- Boiling point** : Not available.
- Flash point** : Higher than 93.3°C (200°F).
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : Not available.
- Relative density** : Not available.
- Solubility** : Not available.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Viscosity** : Kinematic (room temperature): >4 cm²/s (>400 cSt)
Kinematic (40°C (104°F)): >0.21 cm²/s (>21 cSt)
- Density** : 16.29 lbs/gal
- VOC data**
- VOC % by weight** : 18.32
- VOC % by volume** : 21.96
- VOC lbs/gallon** : 2.99
- VOC lbs/gal less water** : 2.99

Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.

Section 10. Stability and reactivity

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Aluminium powder (stabilized)	LD50 Oral	Rat	>2000 mg/kg	-

Carcinogenicity

Classification

Product/ingredient name	OSHA	IARC	NTP
copper	+	-	-

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Name	Result
Distillates (petroleum), solvent-refined middle	ASPIRATION HAZARD - Category 1
Distillates (petroleum), acid-treated middle	ASPIRATION HAZARD - Category 1
Distillates (petroleum), acid-treated middle	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Not available.

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : May cause an allergic skin reaction.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : No specific data.
Inhalation : No specific data.
Skin contact : Adverse symptoms may include the following:
 irritation
 redness
Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Section 11. Toxicological information

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Not available.

Mobility in soil









Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	IMDG	IATA
UN number	UN3082	UN3082	UN3082	UN3082
UN proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (copper).	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (copper, zinc)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (copper, zinc)	Environmentally hazardous substance, liquid, n.o.s. (copper, zinc)
Transport hazard class(es)	9  	9  	9  	9  
Packing group	III	III	III	III
Environmental hazards	Yes.	Yes.	Yes.	Yes.
Additional information	<p>Non-bulk packages of this product are not regulated as hazardous materials in package sizes less than the product reportable quantity, unless transported by inland waterway. The marine pollutant mark is not required when transported on inland waterways in sizes of ≤5 L or ≤5 kg.</p> <p>Reportable quantity 4040 lbs / 18343.4 kg [2424.1 gal / 9176.3 L] Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.</p> <p>Limited quantity Yes.</p> <p>Special provisions 8, 146, 335, IB3, T4, TP1, TP29</p>	<p>Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.43-2.45 (Class 9), 2.7 (Marine pollutant mark).</p> <p>Non-bulk packages of this product are not regulated as dangerous goods when transported by road or rail.</p> <p>Explosive Limit and Limited Quantity Index 5</p> <p>Special provisions 16</p>	<p>This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.</p> <p>Emergency schedules (EmS) F-A, S-F</p> <p>Special provisions 274, 335</p>	<p>This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.</p> <p>Passenger and Cargo Aircraft Quantity limitation: 450 L Packaging instructions: 964</p> <p>Cargo Aircraft Only Quantity limitation: 450 L Packaging instructions: 964</p> <p>Limited Quantities - Passenger Aircraft Quantity limitation: 30 kg Packaging instructions: Y964</p> <p>Special provisions A97, A158</p>

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b)**: All components are listed or exempted.

SARA 311/312

Classification : Immediate (acute) health hazard

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Aluminium powder (stabilized)	7429-90-5	12
	copper	7440-50-8	8.575
	zinc	7440-66-6	2.475
Supplier notification	Aluminium powder (stabilized)	7429-90-5	12
	copper	7440-50-8	8.575
	zinc	7440-66-6	2.475

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

Section 16. Other information

History

Date of printing : 6/1/2018

Date of issue/Date of revision : 7/25/2017

Date of previous issue : No previous validation

Version : 1

Key to abbreviations

: ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 IATA = International Air Transport Association
 IBC = Intermediate Bulk Container
 IMDG = International Maritime Dangerous Goods
 LogPow = logarithm of the octanol/water partition coefficient
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
 UN = United Nations

📌 Indicates information that has changed from previously issued version.

Notice to reader

Flint Group has prepared this Safety Data Sheet ("SDS") in compliance with 29 CFR 1910.1200, understands that its customers may use this SDS to comply with that section, and believes that the data set forth herein are accurate as of the date hereof; however, this SDS shall not constitute a warranty with respect thereto.