

1. Identification

Product identifier	FLEXJOINT™ 700 Topcoat Resin
Other means of identification	None.
Recommended use	Not available.
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Company Name	Armor Limited, Inc.
Address	2410 US-15 South, Sumter, SC 29150
After hours telephone number	1-877-982-7667
Normal work hours telephone number	1-877-982-7667
Website	www.armor-inc.com
E-mail	customerservice@armor-inc.com
Emergency 24-hour telephone number	CHEMTREC North America: +1-800-424-9300, International: +1-703-527-3887
Information on operation hours	8:00am to 5:00pm

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 2
Health hazards	Specific target organ toxicity, single exposure	Category 3 narcotic effects
Environmental hazards	Not classified.	
OSHA defined hazards	Not classified.	

Label elements



Signal word	Danger
Hazard statement	Highly flammable liquid and vapor. May cause drowsiness or dizziness.
Precautionary statement	
Prevention	Keep container tightly closed. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing dust/fume/gas/mist/vapors/spray. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only outdoors or in a well-ventilated area. Use explosion-proof electrical/ventilating/lighting equipment. Wear protective gloves/eye protection/face protection. Ground/bond container and receiving equipment.
Response	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. In case of fire: Use appropriate media for extinction.
Storage	Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
2-BUTANONE		78-93-3	< 65
CARBON BLACK		1333-86-4	< 30
Magnesium Oxide		1309-48-4	< 20

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical attention if irritation develops and persists.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Do not induce vomiting. If ingestion of a large amount does occur, call a poison control center immediately.
Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.
General information	Take off all contaminated clothing immediately. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Alcohol foam. Dry chemicals. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Carbon monoxide and carbon dioxide. Carbonyl fluoride. Hydrogen Fluoride.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Wear self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode when fighting fires.
Fire fighting equipment/instructions	Cool containers exposed to heat with water spray and remove container, if no risk is involved. Move containers from fire area if you can do it without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of vapors or mists. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil, etc.) away from spilled material. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Vapors may form explosive mixtures with air. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Do not smoke. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid breathing mist or vapor. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Use care in handling/storage. Ground and bond containers when transferring material. Keep container tightly closed when not in use.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in original tightly closed container. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Keep in an area equipped with sprinklers.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
2-BUTANONE (CAS 78-93-3)	PEL	590 mg/m3	
		200 ppm	
CARBON BLACK (CAS 1333-86-4)	PEL	3.5 mg/m3	
Magnesium Oxide (CAS 1309-48-4)	PEL	15 mg/m3	Total particulate.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Magnesium Oxide (CAS 1309-48-4)	TWA	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
		50 mppcf	Total dust.
		15 mppcf	Respirable fraction.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
2-BUTANONE (CAS 78-93-3)	STEL	300 ppm	
	TWA	200 ppm	
CARBON BLACK (CAS 1333-86-4)	TWA	3 mg/m3	Inhalable fraction.
Magnesium Oxide (CAS 1309-48-4)	TWA	10 mg/m3	Inhalable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
2-BUTANONE (CAS 78-93-3)	STEL	885 mg/m3
		300 ppm
	TWA	590 mg/m3
		200 ppm
CARBON BLACK (CAS 1333-86-4)	TWA	0.1 mg/m3

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
2-BUTANONE (CAS 78-93-3)	2 mg/l	MEK	Urine	*

* - For sampling details, please see the source document.

Appropriate engineering controls	Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear chemical splash goggles and face shield when eye and face contact is possible due to splashing or spraying of material.
Skin protection	
Hand protection	Rubber gloves resistant to methyl ethyl ketone.
Other	Wear suitable protective clothing. Chemical apron.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Form	Liquid.
Color	Black
Odor	Organic Solvent.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	175.26 °F (79.59 °C)
Flash point	19.4 °F (-7.0 °C)
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Specific gravity	1.04

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.

Incompatible materials	Strong oxidizing agents. Strong bases. Caustics. Mineral Acids. Acid anhydrides. Amines.
Hazardous decomposition products	Carbon monoxide. Carbon dioxide. Hydrogen fluoride. Carbonyl fluoride. Carbonyl fluoride.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause drowsiness and dizziness.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	May be irritating to eyes.
Ingestion	Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics Not available.

Information on toxicological effects

Acute toxicity

Product	Species	Test Results
FLEXJOINT™ 700 Topcoat Resin		
Acute		
Dermal		
LD50	Rabbit	13330 mg/kg
Oral		
LD50	Rat	3423 mg/kg

Components	Species	Test Results
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2-BUTANONE (CAS 78-93-3)		
Acute		
Dermal		
LD50	Rabbit	> 8000 mg/kg
Oral		
LD50	Rat	2300 - 3500 mg/kg
CARBON BLACK (CAS 1333-86-4)		
Acute		
Oral		
LD50	Rat	> 8000 mg/kg

Skin corrosion/irritation	Not available.
Serious eye damage/eye irritation	May be irritating to eyes.

Respiratory or skin sensitization

Respiratory sensitization	Not available.
Skin sensitization	Not available.

Germ cell mutagenicity Not available.

Carcinogenicity This product contains components that may cause cancer, however, after formation this product is encapsulated and the normal routes of exposure are unavailable.

IARC Monographs. Overall Evaluation of Carcinogenicity

CARBON BLACK (CAS 1333-86-4) 2B Possibly carcinogenic to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

CARBON BLACK (CAS 1333-86-4) Known To Be Human Carcinogen.

Reproductive toxicity Not available.

Specific target organ toxicity - single exposure May cause drowsiness and dizziness.

Specific target organ toxicity - repeated exposure Not available.

Aspiration hazard Not available.

12. Ecological information

Ecotoxicity Components of this product are hazardous to aquatic life.

Product		Species	Test Results
FLEXJOINT™ 700 Topcoat Resin			
Aquatic			
Crustacea	EC50	Daphnia	6708.3335, 48 hours
Fish	LC50	Fish	5072.2222, 96 hours
Acute			
Crustacea	EC50	Daphnia	6708.3335, 48 hours estimated
Fish	LC50	Fish	666.6667, 96 hours estimated
Components		Species	Test Results
2-BUTANONE (CAS 78-93-3)			
Aquatic			
Acute			
Crustacea	EC50	Water flea (Daphnia magna)	>= 4025 - <= 6440 mg/l, 48 hours
Fish	LC50	Sheepshead minnow (Cyprinodon variegatus)	> 400 mg/l, 96 hours

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential Not available.

Partition coefficient n-octanol / water (log Kow)

2-BUTANONE 0.29

Mobility in soil Not available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1139
UN proper shipping name	Coating solution (includes surface treatments or coatings used for industrial or other purposes such as vehicle undercoating, drum or barrel lining)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	III
Special precautions for user	Not available.
Special provisions	B1, IB3, T2, TP1
Packaging exceptions	150
Packaging non bulk	203
Packaging bulk	242

IATA

UN number UN1139

UN proper shipping name Coating solution (includes surface treatments or coatings used for industrial or other purposes such as vehicle undercoating, drum or barrel lining)

Transport hazard class(es)

Class 3

Subsidiary risk -

Packing group III

Environmental hazards No.

ERG Code 3L

Special precautions for user Not available.

Other information

Passenger and cargo aircraft Allowed with restrictions.

Cargo aircraft only Allowed with restrictions.

IMDG

UN number UN1139

UN proper shipping name COATING SOLUTION (includes surface treatments or coatings used for industrial purposes such as vehicle under-coating, drum or barrel lining)

Transport hazard class(es)

Class 3

Subsidiary risk -

Packing group III

Environmental hazards

Marine pollutant No.

EmS F-E, S-E

Special precautions for user Not available.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not available.

DOT



IATA; IMDG



15. Regulatory information

US federal regulations

Toxic Substances Control Act (TSCA)

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

2-BUTANONE (CAS 78-93-3)

Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)**SARA 302 Extremely hazardous substance**

Not listed.

SARA 311/312 Hazardous chemical Yes

Classified hazard categories Flammable (gases, aerosols, liquids, or solids)
Specific target organ toxicity (single or repeated exposure)

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.**Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number**

2-BUTANONE (CAS 78-93-3) 6714

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

2-BUTANONE (CAS 78-93-3) 35 %WV

DEA Exempt Chemical Mixtures Code Number

2-BUTANONE (CAS 78-93-3) 6714

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

2-BUTANONE (CAS 78-93-3) Low priority

US state regulations**US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))**

2-BUTANONE (CAS 78-93-3)

CARBON BLACK (CAS 1333-86-4)

California Proposition 65

WARNING: WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

CARBON BLACK (CAS 1333-86-4) Listed: February 21, 2003

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes
*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s) A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).		

16. Other information, including date of preparation or last revision

Issue date	12-01-2022
Version #	01
NFPA ratings	Health: 1 Flammability: 3 Instability: 0
Disclaimer	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.
Revision information	Hazard(s) identification: Response Hazard(s) identification: Prevention Hazard(s) identification: Hazard statement Hazard(s) identification: GHS Signal Words Hazard(s) identification: Supplemental information Composition / Information on Ingredients: Disclosure Overrides HazReg Data: North America GHS: Classification