PLEXIGLAS® G ACRYLIC SHEET COLORS

1. PRODUCT AND COMPANY IDENTIFICATION

Company

Arkema Inc.
900 First Avenue
King of Prussia, Pennsylvania 19406

Altuglas International

Customer Service Telephone Number: (800) 523-1532
(Monday through Friday, 8:00 AM to 5:00 PM EST)

Emergency Information

Transportation: CHEMTREC: (800) 424-9300
(24 hrs., 7 days a week)
Medical: Rocky Mountain Poison Center: (866) 767-5089
(24 hrs., 7 days a week)

Product Information

Product name: PLEXIGLAS® G ACRYLIC SHEET COLORS
Synonyms: See Section 16 for list of grades
Molecular formula: Mixture
Chemical family: Acrylic copolymers
Product use: Polymers industry, Special applications, in general

2. HAZARDS IDENTIFICATION

Emergency Overview

Color: various colours
Physical state: solid
Form: sheets
Odor: odourless

***Classification of the substance or mixture:**
Not a hazardous substance or mixture.

GHS-Labelling

Supplemental Hazard Statements:
Processing may release vapors and/or fumes which cause eye, skin and respiratory tract irritation.

Supplemental information:

Potential Health Effects:

The product, in the form supplied, is not anticipated to produce significant adverse human health effects. Contains high molecular weight polymer(s). Effects due to processing releases or residual monomer: Irritating to eyes, respiratory system and skin. Possible cross sensitization with other acrylates and methacrylates. Prolonged or repeated exposure may cause: headache, drowsiness, nausea, weakness, (severity of effects depends on extent of exposure).

Other:

Handle in accordance with good industrial hygiene and safety practice. (sheets) Secondary operations, such as grinding, sanding or sawing, can produce dust which may present a respiratory hazard. This product may release fume and/or vapor of variable composition depending on processing time and temperature.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No.	Wt/Wt	GHS Classification**
Acrylic copolymer	Proprietary*	<= 100 %	Not classified
Methyl methacrylate	80-62-6	< 2 %	H225, H315, H317, H335
Proprietary component	Proprietary*	< 5 %	Not classified
Proprietary compound	Proprietary*	< 5 %	H312
Proprietary fatty acid	Proprietary*	< 5 %	Not classified
Styrene based polymer	Proprietary*	< 5 %	Not classified

*The specific chemical identity is withheld because it is trade secret information of Arkema Inc.

**For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1. Description of necessary first-aid measures:

Inhalation:
If inhaled, remove victim to fresh air.

Skin:
In case of contact, immediately flush skin with plenty of water. If molten polymer gets on the skin, cool rapidly with cold water. Do not peel solidified product off the skin. Obtain medical treatment for thermal burns. Remove material from clothing. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eyes:
Immediately flush eye(s) with plenty of water. Obtain medical treatment for thermal burns.

Ingestion:
If swallowed, DO NOT induce vomiting. Get medical attention. Never give anything by mouth to an unconscious person.

4.2. Most important symptoms/effects, acute and delayed:

For most important symptoms and effects (acute and delayed), see Section 2 (Hazard Statements and Supplemental Information if applicable) and Section 11 (Toxicology Information) of this SDS.

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

Unless otherwise noted in Notes to Physician, no specific treatment noted; treat symptomatically.

5. FIREFIGHTING MEASURES

Extinguishing media (suitable):
Water spray, Carbon dioxide (CO2), Foam, Dry chemical

Protective equipment:
Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand / NIOSH approved or equivalent).

Further firefighting advice:
Fire fighting equipment should be thoroughly decontaminated after use.

Fire and explosion hazards:

Heated material can form flammable vapors with air.
When burned, the following hazardous products of combustion can occur:
Carbon oxides
Hazardous organic compounds

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, Emergency procedures, Methods and materials for containment/clean-up:
Pick up and transfer to properly labelled containers. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

Protective equipment:
Appropriate personal protective equipment is set forth in Section 8.

7. HANDLING AND STORAGE

Handling

General information on handling:
Avoid breathing dust.
Avoid breathing processing fumes or vapors.
Handle in accordance with good industrial hygiene and safety practices. These practices include avoiding unnecessary exposure and removal of material from eyes, skin, and clothing.

Storage

General information on storage conditions:
Avoid extreme temperatures. Keep in a dry, cool place.

Storage incompatibility – General:
Store away from sources of heat and light.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne Exposure Guidelines:

Proprietary component (Proprietary)

US. ACGIH Threshold Limit Values

Time weighted average	10 mg/m3

Methyl methacrylate (80-62-6)

US. ACGIH Threshold Limit Values

Time weighted average	50 ppm
Short Term Exposure Limit (STEL):	100 ppm

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

PEL:	100 ppm (410 mg/m3)

Only those components with exposure limits are printed in this section. Limits with skin contact designation above have skin contact effect. Air sampling alone is insufficient to accurately quantitate exposure. Measures to prevent significant cutaneous absorption may be required. Limits with a sensitizer designation above mean that exposure to this material may cause allergic reactions.

Engineering controls:
Investigate engineering techniques to reduce exposures below airborne exposure limits or to otherwise reduce exposures. Provide ventilation if necessary to minimize exposures or to control exposure levels to below airborne exposure limits (if applicable see above). If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.

Respiratory protection:
Avoid breathing dust. Avoid breathing processing fumes or vapors. Where airborne exposure is likely or airborne exposure limits are exceeded (if applicable, see above), use NIOSH approved respiratory protection equipment appropriate to the material and/or its components and substances released during processing. Consult respirator manufacturer to determine appropriate type equipment for a given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure or where exposure limit may be significantly exceeded, use an approved full face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR § 1910.134.

Skin protection:
Processing of this product releases vapors or fumes which may cause skin irritation. Minimize skin contamination by following good industrial hygiene practice. Wearing protective gloves is recommended. Wash hands and contaminated skin thoroughly after contact with processing fumes or vapors. Wash thoroughly after handling.

Eye protection:
Use good industrial practice to avoid eye contact. Processing of this product releases vapors or fumes which may cause eye irritation. Where eye contact may be likely, wear chemical goggles and have eye flushing equipment available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	various colours
Physical state:	solid
Form:	sheets

Odor:	odourless
Odor threshold:	No data available
Flash point	Not applicable
Auto-ignition temperature:	579 °F (304 °C)
Lower flammable limit (LFL):	Not applicable
Upper flammable limit (UFL):	Not applicable
pH:	Not applicable
Density:	Not applicable
Specific Gravity (Relative density):	No data available
Boiling point/boiling range:	No data available
Melting point/range:	No data available.
Freezing point:	No data available
Evaporation rate:	No data available
Solubility in water:	insoluble
Viscosity, dynamic:	No data available
% Volatiles:	0 %
Oil/water partition coefficient:	No data available.
Thermal decomposition:	572 °F (300 °C)
Flammability:	See GHS Classification in Section 2 if applicable

10. STABILITY AND REACTIVITY

Stability:
This material is chemically stable under normal and anticipated storage, handling and processing conditions.

Hazardous reactions:
None known.

Materials to avoid:
None under normal conditions of use.

Conditions / hazards to avoid:
Avoid flames, welding arcs, potential ignition sources, or other high temperature sources which induce thermal decomposition.

Hazardous decomposition products:

Thermal decomposition giving flammable and toxic products :
Carbon oxides
Acrylates
Methacrylates
Hazardous organic compounds

11. TOXICOLOGICAL INFORMATION

Data on this material and/or its components are summarized below.

Data for PLEXIGLAS® G ACRYLIC SHEET COLORS

Acute toxicity

Dermal:
Acute toxicity estimate > 5,000 mg/kg.

Inhalation:
4 h Acute toxicity estimate > 40 mg/l. (vapour)

Skin Sensitization:
Not a sensitizer. Buehler Test. (guinea pig) No skin allergy was observed. (similar material)

Data for Acrylic copolymer (Proprietary)

Acute toxicity

Oral:
Practically nontoxic. (rat) LD50 = 8,000 mg/kg. (similar material)

Genotoxicity

Assessment in Vitro:
No genetic changes were observed in laboratory tests using: bacteria, human cells

Genotoxicity

Assessment in Vivo:
No genetic changes were observed in laboratory tests using: animals

Other information
Biocompatibility testing for this polymer or its extracts has generally shown that the material is inert.
The information presented is from representative materials in this chemical class. The results may vary depending on the test substance.
Effects due to processing releases or residual monomer:
Possible cross sensitization with other acrylates and methacrylates

Human experience
Skin contact:
Skin: Irritant but not a sensitizer. Mechanical irritation. (studied using human volunteers)

Data for Methyl methacrylate (80-62-6)

Acute toxicity

Oral:
Practically nontoxic. (rat) LD50 = 7,900 mg/kg.

Dermal:
Practically nontoxic. (rabbit) LD50 > 5,000 mg/kg.

Inhalation:
Practically nontoxic. (rat) 4 h LC50 = 30 mg/l. (vapor)

signs: respiratory irritation, breathing difficulties, anesthetic effects

Specific target organ toxicity - single exposure:
May cause respiratory irritation.

Skin Irritation:
Causes skin irritation. (rabbit)

Eye Irritation:
Causes mild eye irritation. (rabbit)

Skin Sensitization:
May cause allergic skin reaction. Guinea pig maximization test. Skin allergy was observed.

May cause allergic skin reaction. LLNA: Local Lymph Node Assay. (mouse) Skin allergy was observed.

Possible cross sensitization with other acrylates and methacrylates

Repeated dose toxicity
Chronic inhalation administration to rat and hamster / affected organ(s): olfactory tissue

Subchronic inhalation administration to rat and mouse / affected organ(s): bone marrow, kidney, liver,

nasal tissues, respiratory tract, central nervous system, peripheral nervous system, olfactory tissue / signs: decreased survival / (Repeated exposure at high concentrations)

Repeated oral administration to rat / affected organ(s): kidney, Stomach, nervous system

Chronic drinking water administration to rat / affected organ(s): kidney / signs: increased organ weight

Repeated dermal application administration to rat, rabbit / signs: irritation

Carcinogenicity
Chronic inhalation administration to rat and mouse / affected organ(s): lung, upper respiratory tract / signs: fibrosis, nasal lesions affecting the sense of smell / No increase in tumor incidence was reported. (increased mortality)

Chronic drinking water administration to rat / No increase in tumor incidence was reported.

Repeated dermal administration to rat / affected organ(s): skin / No increase in tumor incidence was reported.

Repeated dietary administration to Dog / No increase in tumor incidence was reported.

Genotoxicity

Assessment in Vitro:
No genetic changes were observed in laboratory tests using: bacteria

Both positive and negative responses for genetic changes were observed in laboratory tests using: animal cells

Genotoxicity

Assessment in Vivo:
No genetic changes were observed in laboratory tests using: mice, rats

Developmental toxicity
Exposure during pregnancy. Inhalation (rat and mouse) / No birth defects were observed. (delays in development, levels produced toxic effects in the mothers and offspring)
Exposure during pregnancy. Oral (rabbit) / No birth defects were observed.

Reproductive effects
Reproduction Test. Inhalation (mouse) / No toxicity to reproduction
Reproduction Test. Oral (rat) / No toxicity to reproduction

Human experience
General:
Epidemiology studies have not shown an increase in cancer .

Human experience
Inhalation:
Respiratory system: irritation, asthma-like symptoms. (based on reports of occupational exposure to workers)

Dust and/or vapor are reported to cause irritation when proper industrial hygiene controls/procedures are not used.

Human experience
Skin contact:
Skin: dermatitis, numbness, tingling, peripheral neuropathy. Skin allergy was observed. (based on reports of occupational exposure to workers)

Human experience
Eye contact:
Eyes: Lachrymation, irritation. (based on reports of occupational exposure to workers)

Data for Proprietary component (Proprietary)

Acute toxicity

Oral:
Practically nontoxic. (rat) LD50 > 5,000 mg/kg.

Dermal:
No deaths occurred. (rabbit) LD0 > 2,000 mg/kg.

Skin Irritation:
Not irritating. (rabbit)

Eye Irritation:
Causes mild eye irritation. (rabbit)

Skin Sensitization:
Not a sensitizer. Buehler method. (guinea pig) No skin allergy was observed. (data for a similar material)

Repeated dose toxicity
Repeated oral administration to rat / No adverse effects reported. (data for a similar material)

Carcinogenicity
Chronic dietary administration to rat / No increase in tumor incidence was reported.

Genotoxicity

Assessment in Vitro:
No genetic changes were observed in laboratory tests using: bacteria, animal cells, (data for a similar material)

Developmental toxicity
Reproductive/Developmental Effects Screening Assay. oral (rat) / No birth defects were observed. (data for a similar material)

Reproductive effects
Reproductive/Developmental Effects Screening Assay. oral (rat) / No toxicity to reproduction / (data for a similar material)

Human experience
Skin contact:
Skin: No skin allergy was observed. (studied using human volunteers)

Data for Proprietary compound (Proprietary)

Acute toxicity

Oral:
Practically nontoxic. (rat) LD50 > 3,200 mg/kg.

Dermal:
Harmful in contact with skin. (guinea pig) LD50 > 1,000 mg/kg.

Skin Irritation:
Practically non-irritating. (guinea pig) (24 h)

Skin Sensitization:
Not a sensitizer. Repeated exposure. (guinea pig)

Data for Proprietary fatty acid (Proprietary)

Acute toxicity

Oral:
Practically nontoxic. (rat) LD50 > 5,000 mg/kg.

Dermal:
May be harmful in contact with skin. (rabbit) LD50 > 2,000 mg/kg.

Skin Irritation:
Not irritating. (rabbit) (4 h) (occluded exposure)

Eye Irritation:
Causes mild eye irritation. (rabbit)

Repeated dose toxicity
Repeated oral administration to rat / No adverse systemic effects reported.

Genotoxicity

Assessment in Vitro:
No genetic changes were observed in laboratory tests using: bacteria, animal cells

Developmental toxicity
Reproductive/Developmental Effects Screening Assay. Oral (rat) / No birth defects were observed.

Reproductive effects
Reproductive/Developmental Effects Screening Assay. Oral (rat) / No toxicity to reproduction.

Data for Styrene based polymer (Proprietary)

Acute toxicity

Inhalation:
Practically nontoxic. (rat) LC50 = 56.6 mg/l. (combustion products)

Carcinogenicity
Chronic subcutaneous implant administration to rat / signs: tumors at the site of application
Classified by the International Agency for Research on Cancer as: Group 3: Unclassifiable as to carcinogenicity in humans.

Human experience
General:
Epidemiology studies have not shown an increase in cancer .

Dust contact with the eyes can lead to mechanical irritation.

Contact with dust can cause mechanical irritation or drying of the skin.

12. ECOLOGICAL INFORMATION

Chemical Fate and Pathway
Data on this material and/or its components are summarized below.

Data for Methyl methacrylate (80-62-6)

Biodegradation:
Readily biodegradable. (14 d) biodegradation 94 %

Octanol Water Partition Coefficient:
log Pow: = 1.38

Data for Proprietary component (Proprietary)

Biodegradation:
Readily biodegradable. (28 d) biodegradation 72 %

Octanol Water Partition Coefficient:
log Pow: > 8.23

Data for Proprietary fatty acid (Proprietary)

Biodegradation:
Readily biodegradable. (28 d) biodegradation 65 %

Data for Styrene based polymer (Proprietary)

Biodegradation:
Not readily biodegradable.

Bioaccumulation:
Low potential to bioaccumulate

Ecotoxicology
Data on this material and/or its components are summarized below.

Data for Methyl methacrylate (80-62-6)

Aquatic toxicity data:
Practically nontoxic. Lepomis macrochirus (Bluegill sunfish) 96 h LC50 = 191 - 283 mg/l
No effect up to the limit of solubility. Oncorhynchus mykiss (rainbow trout) 96 h LC50 > 79 mg/l

Aquatic invertebrates:
Harmful. Daphnia magna (Water flea) 48 h EC50 = 69 mg/l

Algae:
Practically nontoxic. Pseudokirchneriella subcapitata (green algae) 72 h ErC50 > 110 mg/l

Microorganisms:
Activated sludge 14 d EC50 > 100 mg/l

Chronic toxicity to fish:
Practically nontoxic. Danio rerio (zebra fish) 35 d NOEC (Early-life Stage) = 9.4 mg/l

Chronic toxicity to aquatic invertebrates:
Practically nontoxic. Daphnia magna (Water flea) 21 d NOEC = 37 mg/l

Data for Proprietary component (Proprietary)

Aquatic toxicity data:
No effect up to the limit of solubility. Leuciscus idus (Golden orfe) 48 h LC50 > 10,000 mg/l (nominal concentrations reported, Water accommodated fraction was tested.)

Aquatic invertebrates:
No effect up to the limit of solubility. 48 h EC50 (No effect up to the limit of solubility.)
No effect up to the limit of solubility. Daphnia magna (Water flea) 47 h EC50 > 32 mg/l (nominal concentrations reported, Water accommodated fraction was tested.)

Algae:
No effect up to the limit of solubility. Scenedesmus capricornutum (fresh water algae) 72 h NOEC > 0.9 mg/l (nominal concentrations reported, Water accommodated fraction was tested.)

Data for Proprietary fatty acid (Proprietary)

Aquatic toxicity data:
No effect up to the limit of solubility. Danio rerio (zebra fish) 96 h LC50 > 1,000 mg/l (Nominal concentration)

Aquatic invertebrates:
No effect up to the limit of solubility. Daphnia magna (Water flea) 48 h EC50 > 4.8 mg/l

Algae:
No effect up to the limit of solubility. Pseudokirchneriella subcapitata (green algae) 72 h ErC50 > 0.9 mg/l

Chronic toxicity to aquatic invertebrates:

No effect up to the limit of solubility. Daphnia magna (Water flea) 21 d NOEC > 0.22 mg/l

Chronic toxicity to aquatic plants:
No effect up to the limit of solubility. Pseudokirchneriella subcapitata (green algae) 72 h NOEC r > 0.9 mg/l

13. DISPOSAL CONSIDERATIONS

Waste disposal:
Where possible recycling is preferred to disposal or incineration. If recycling is not an option, incinerate or dispose of in accordance with federal, state, and local regulations. Pigmented, filled and/or solvent laden product may require special disposal practices in accordance with federal, state and local regulations. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits. Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information incomplete, inaccurate, or otherwise inappropriate. Furthermore, state and local waste disposal requirements may be more restrictive or otherwise different from federal laws and regulations.

14. TRANSPORT INFORMATION

US Department of Transportation (DOT): not regulated

International Maritime Dangerous Goods Code (IMDG): not regulated

15. REGULATORY INFORMATION

Chemical Inventory Status

US. Toxic Substances Control Act	TSCA	The components of this product are all on the TSCA Inventory.

United States – Federal Regulations

SARA Title III – Section 302 Extremely Hazardous Chemicals:
The components in this product are either not SARA Section 302 regulated or regulated but present in negligible concentrations.

SARA Title III - Section 311/312 Hazard Categories:
No SARA Hazards

SARA Title III – Section 313 Toxic Chemicals:
The following components are subject to reporting levels established by SARA Title III, Section 313:

Chemical name	CAS-No.	De minimis concentration	Reportable threshold:
Methyl methacrylate	80-62-6	1.0 %	25000 lbs (Manufacturing and processing) 10000 lbs (Otherwise used (non-manufacturing/processing))

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Reportable Quantity (RQ):

Chemical name	CAS-No.	Reportable quantity
Methyl methacrylate	80-62-6	1000 lbs

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.
H225 Highly flammable liquid and vapour.
H312 Harmful in contact with skin.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.

Miscellaneous:

Grades: G 3143, G 2025, G 2114, G 2064, G 2412, G 7328, G 3015, G 2074, G 2447, G 2067, G 2069, G 2370, G 2404, G 2515, G 3379, G 7420, G 2514, G 3390, G 2050, G 2111, G 3374, GRANITE 3158, GRANITE 3124, G 3030, G 3063, G 2129, G 2423, G 2424

Latest Revision(s):

Reference number: 600002670
Date of Revision: 12/31/2020
Date Printed: 01/01/2021

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when such product is used in combination with other materials or in any process. The user should thoroughly test any application before commercialization. Nothing contained herein constitutes a license to practice under any patent and it should not be construed as an inducement to infringe any patent and the user is advised to take appropriate steps to be sure that any proposed use of the product will not result in patent infringement. See SDS for Health & Safety Considerations.

Arkema has implemented a Medical Policy regarding the use of Arkema products in Medical Devices applications that are in contact with the body or circulating bodily fluids (http://www.arkema.com/en/social-responsibility/responsible-product-management/medical-device-policy/index.html) Arkema has designated Medical grades to be used for such Medical Device applications. Products that have not been designated as Medical grades are not authorized by Arkema for use in Medical Device applications that are in contact with the body or circulating bodily fluids. In addition, Arkema strictly prohibits the use of any Arkema products in Medical Device applications that are implanted in the body or in contact with bodily fluids or tissues for greater than 30 days. The Arkema trademarks and the Arkema name shall not be used in conjunction with customers' medical devices, including without limitation, permanent or temporary implantable devices , and customers shall not represent to anyone else, that Arkema allows, endorses or permits the use of Arkema products in such medical devices.
It is the sole responsibility of the manufacturer of the medical device to determine the suitability (including biocompatibility) of all raw materials, products and components, including any medical grade Arkema products, in order to ensure that the final end-use product is safe for its end use; performs or functions as intended; and complies with all applicable legal and regulatory requirements (FDA or other national drug agencies) It is the sole responsibility of the manufacturer of the medical device to conduct all necessary tests and inspections and to evaluate the medical device under actual end-use requirements and to adequately advise and warn purchasers, users, and/or learned intermediaries (such as physicians) of pertinent risks and fulfill any postmarket surveillance obligations. Any decision regarding the appropriateness of a particular Arkema material in a particular medical device should be based on the judgment of the manufacturer, seller, the competent authority, and the treating physician.