

1. Identification

Product identifier STARCOOL™ 111
METALWORKING FLUID

Other means of identification

SDS number Not applicable

Recommended use METALWORKING FLUID

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company name Milacron Marketing Company LLC
3000 Disney Street
Cincinnati, Ohio 45209

Telephone (General Information) 513-458-8100

Emergency telephone number 1-800-424-9300 (CHEMTREC)

Emergency telephone number (outside USA) 1-703-527-3887 (CHEMTREC)

2. Hazard(s) identification

Physical hazards Corrosive to metals Category 1

Health hazards Skin irritation Category 2
Serious eye irritation Category 2A
Sensitization, skin Category 1

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements



Signal word Warning

Hazard statement May be corrosive to metals. Causes skin irritation. Causes serious eye irritation. May cause an allergic skin reaction.

Precautionary statement

Prevention Keep only in original container. Avoid breathing mist or vapor. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. Wear eye protection/face protection. Wear protective gloves.

Response If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse. Absorb spillage to prevent material damage.

Storage Store in corrosive resistant container with a resistant inner liner.

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

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information

2.2% of the mixture consists of component(s) of unknown acute dermal toxicity.

The classified hazards shown on this SDS are associated with the product concentrate. These hazards are not expected under recommended use conditions and dilution.

3. Composition/information on ingredients**Mixtures**

Chemical name	Common name and synonyms	CAS number	%
TRIETHANOLAMINE		102-71-6	10 - 20
MONOETHANOLAMINE		141-43-5	3 - 5
HEXAHYDRO-1,3,5-TRIS (2-HYDROXYETHYL)-S- TRIAZINE		4719-04-4	1 - 3
N-BUTYLETHANOLAMINE		111-75-1	1 - 3
NONANOIC (PELARGONIC) ACID		112-05-0	1 - 3
Other components below reportable levels			70 - 80

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures**Inhalation**

Move to fresh air. Call a physician if symptoms develop or persist. Under normal conditions of intended use, this material is not expected to be an inhalation hazard.

Skin contact

Rinse skin with water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Eye contact

Rinse with water. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion

Rinse mouth thoroughly. Drink 1 or 2 glasses of water. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.

Most important symptoms/effects, acute and delayed

Direct contact with eyes may cause temporary irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause an allergic skin reaction.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Symptoms may be delayed.

General information

If exposed or concerned: Get medical advice/attention. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures**Suitable extinguishing media**

Water fog. Alcohol resistant foam. Dry powder. Carbon dioxide (CO₂). Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

Not applicable, non-combustible.

Specific hazards arising from the chemical

During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Wear suitable protective equipment.

Fire fighting equipment/instructions

Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials. In the event of fire and/or explosion do not breathe fumes.

General fire hazards

Combustible.

6. Accidental release measures**Personal precautions, protective equipment and emergency procedures**

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. 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

Local authorities should be advised if significant spillages cannot be contained. This product is miscible in water. Prevent entry into waterways, sewer, basements or confined areas. Clean up in accordance with all applicable regulations.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. 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.

Environmental precautions

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Contact local authorities in case of spillage to drain/aquatic environment. Avoid discharge into drains, water courses or onto the ground. Use appropriate containment to avoid environmental contamination.

7. Handling and storage

Precautions for safe handling

To avoid thermal decomposition, do not overheat. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Do not get in eyes, on skin, or on clothing. Avoid breathing mist or vapor. Avoid prolonged or repeated contact with skin. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Keep away from heat and sources of ignition. Store in a cool, dry place out of direct sunlight. Store in corrosive resistant container with a resistant inner liner. Store in original tightly closed container. Keep only in the original container. Store away from incompatible materials (see Section 10 of the SDS). Do not allow material to freeze. If frozen, product may separate. Thaw completely at room temperature and stir thoroughly prior to use.

8. Exposure controls/personal protection

Occupational exposure limits

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

	Type	Value
MONOETHANOLAMINE (CAS 141-43-5)	PEL	6 mg/m3
		3 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

	Type	Value
MONOETHANOLAMINE (CAS 141-43-5)	STEL	15 mg/m3
		6 ppm
	TWA	8 mg/m3 3 ppm

US. ACGIH Threshold Limit Values

	Type	Value
MONOETHANOLAMINE (CAS 141-43-5)	STEL	6 ppm
	TWA	3 ppm
TRIETHANOLAMINE (CAS 102-71-6)	TWA	5 mg/m3

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash fountain and emergency showers are recommended.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles). Do not get in eyes. Eye wash fountain is recommended.

Skin protection

Hand protection

Use protective gloves made of: Nitrile.

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	When using, do not eat, drink or smoke. Do not get in eyes, on skin, on clothing. 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	CLEAR
Physical state	Liquid.
Form	Liquid.
Color	Not available.
Odor	CHEMICAL
Odor threshold	Not available.
pH	9.9
Melting point/freezing point	< 26 °F (< -3.3 °C)
Initial boiling point and boiling range	> 212 °F (> 100 °C)
Flash point	Not Applicable
Evaporation rate	Like water when diluted
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	100 % Water Miscible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
pH in aqueous solution	9.2 @ 5%
Specific gravity	1.043
VOC ASTM D2369	7 %

10. Stability and reactivity

Reactivity	May be corrosive to metals.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Heat, flames and sparks. Contact with incompatible materials.
Incompatible materials	Acids. Aluminum. Oxidizing agents. Do not add sodium nitrite or other nitrosating agents which may form cancer causing nitrosamines.
Hazardous decomposition products	Smoke, fumes, oxides of nitrogen, and oxides of carbon

11. Toxicological information

Information on likely routes of exposure

Inhalation	Not classified.
Skin contact	Causes skin irritation. May cause an allergic skin reaction.
Eye contact	Causes eye irritation.
Ingestion	Not classified.

Symptoms related to the physical, chemical and toxicological characteristics Direct contact with eyes may cause temporary irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause an allergic skin reaction.

Information on toxicological effects

Acute toxicity

Components	Species	Test Results
MONOETHANOLAMINE (CAS 141-43-5)		
Acute		
Dermal		
LD50	Rabbit	1025 mg/kg
N-BUTYLETHANOLAMINE (CAS 111-75-1)		
Acute		
Dermal		
<i>Liquid</i>		
LD50	Rabbit	> 2000 mg/kg
Oral		
<i>Liquid</i>		
LD50	Rat	1150 - 7270 mg/kg
NONANOIC (PELARGONIC) ACID (CAS 112-05-0)		
Acute		
Dermal		
<i>Liquid</i>		
LD50	Rat	> 2000 mg/kg
Oral		
<i>Liquid</i>		
LD50	Rat	> 2000 mg/kg
TRIETHANOLAMINE (CAS 102-71-6)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Oral		
<i>Liquid</i>		
LD50	Rat	4190 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization May cause an allergic skin reaction.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

TRIETHANOLAMINE (CAS 102-71-6) 3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Not classified.
Further information	The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

12. Ecological information**Ecotoxicity** Contains a substance which causes risk of hazardous effects to the environment.

Components	Species	Test Results
MONOETHANOLAMINE (CAS 141-43-5)		
Aquatic		
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)
		114 - 196 mg/l, 96 hours
N-BUTYLETHANOLAMINE (CAS 111-75-1)		
Aquatic		
<i>Acute</i>		
Crustacea	EC50	Daphnia
		180 mg/l, 48 hours
Fish	LC50	Ide, silver or golden orfe (Leuciscus idus)
		100 mg/l, 96 hours
NONANOIC (PELARGONIC) ACID (CAS 112-05-0)		
Aquatic		
<i>Acute</i>		
Crustacea	EC50	Daphnia
		96 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)
		91 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability**Bioaccumulative potential****Partition coefficient n-octanol / water (log Kow)**

MONOETHANOLAMINE	-1.31
N-BUTYLETHANOLAMINE	0.64
NONANOIC (PELARGONIC) ACID	3.42
TRIETHANOLAMINE	-2.3

Mobility in soil This product is miscible in water.**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. Dispose of contents/container in accordance with local/regional/national/international regulations.**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

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

14. Transport information**DOT**

UN number	UN3267
UN proper shipping name	Corrosive liquid, basic, organic, n.o.s. (MONOETHANOLAMINE, TRIETHANOLAMINE)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Label(s)	8
Packing group	III
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	IB3, T7, TP1, TP28
Packaging exceptions	154(d)(1)
Packaging non bulk	203
Packaging bulk	241

Supplemental Information: This Product Concentrate is corrosive only to Aluminum. Per 49CFR 173.154(d)(1) Except for a hazardous substance, a hazardous waste, or a marine pollutant, a material classed as Class 8 Packing Group III, solely because of its corrosive effect on aluminum - is not subject to any other requirements of this subchapter when transported by motor vehicle or rail car in packaging that will not react or be degraded by the corrosive material.

IATA

UN number	UN3267
UN proper shipping name	Corrosive liquid, basic, organic, n.o.s. (MONOETHANOLAMINE, TRIETHANOLAMINE)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	III
Environmental hazards	No.
ERG Code	8L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed with restrictions.
Cargo aircraft only	Allowed with restrictions.

IMDG

UN number	UN3267
UN proper shipping name	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (MONOETHANOLAMINE, TRIETHANOLAMINE)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	III
Environmental hazards	
Marine pollutant	No.
EmS	F-A, S-B
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

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

DOT



15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. It may be reportable under the provisions of SARA Sections 311 and 312 if specific threshold criteria are met or exceeded.

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

HEXAHYDRO-1,3,5-TRIS (2-HYDROXYETHYL)-S-TRIAZINE (CAS 4719-04-4) 1.0 % One-Time Export Notification only.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
 Immediate Hazard - Yes
 Delayed Hazard - No
 Fire Hazard - No
 Pressure Hazard - No
 Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

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.

Food and Drug Administration (FDA) Not regulated.

US state regulations

California South Coast Air Quality Management District (SCAQMD) Rule 1144 (VOC Emissions) This product is subject to SCAQMD Rule 1144; it is compliant and may be sold and used in the SCAQMD. The VOC content of the product is 55 g/L, measured by ASTM Method E-1868-10. This product has a specified use dilution VOC limit of 75 g/L, the maximum dilution concentration is 100 % to maintain compliance.

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

International Inventories

Country(s) or region	Inventory name	On inventory or exempt (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No

Country(s) or region	Inventory name	On inventory or exempt (yes/no)*
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s)

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

Issue date	02-04-2015
Revision date	08-09-2017
Version #	03
Further information	Not available.
NFPA ratings	Health: 1 Flammability: 0 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	This document has undergone significant changes and should be reviewed in its entirety.