

SAFETY DATA SHEET

SECTION 1 – Products and Suppliers

- 1.1 Product Identifier:** Morgan Advanced Materials - Wesgo Metals® Grades: Stopyt 62A-RR
- 1.2 Product Use:** Stopyt 62A-RR is used as a stop-off formulation containing DEHP during diffusion bonding and manufacture of aero engine fan blades.
- Uses Advised Against:** None.
- 1.3 Details of the Supplier of the Substance or Mixture Manufacturer:** Morgan Advanced Materials - Wesgo Metals®
2425 Whipple Road
Hayward, California 94544 USA
www.morgantechnicalceramics.com
- 1.4 Suppliers and emergency contact information:** **Emergency Contact Number:** +1-510-491-1100
0800-1700hrs local time, Mon-Fri
Language: English
- SDS Date:** 15 Apr 2015. Replaces version dated 05 Dec 2014.

SECTION 2 – Hazard Identification

2.1 Classification of the Substance or Mixture

CLP/GHS Classification (1272/2008)

EU Classification (67/584/EEC)

This mixture has been self-classified as the following:

- Flammable liquid (category 2)
- Acute toxicity – inhalation (category 4)
- Eye irritant (category 2)
- Toxic to reproduction (category 1B)
- Specific target organ toxicity – single exposure (category 3 – narcotic/respiratory irritant)

2.2 Labeling elements

DANGER! Contains methyl isobutyl ketone, isopropyl alcohol and di(2-ethylhexyl) phthalate



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REACH authorization 14/1/0

Hazard Phrases:

| | |
|--------|---|
| H225 | Highly flammable liquid and vapour. |
| H319 | Causes serious eye irritation. |
| H332 | Harmful if inhaled. |
| H335 | May cause respiratory irritation. |
| H336 | Vapours may cause drowsiness and dizziness. |
| H360FD | May damage fertility or the unborn child. |

Prevention Phrases:

| | |
|------|---|
| 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 |
| P243 | Take precautionary measure against static discharge. |
| P261 | Avoid breathing vapours. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P280 | Wear protective gloves/protective clothing/eye protection. |

Response Phrases:

| | |
|--------------------|--|
| P302 + P352 | IF ON SKIN: Wash with plenty of soap and water. |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P304 + P340 | IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. |
| P301 + P310 | IF SWALLOWED: Immediately call a POISON Center or doctor/physician. |
| P308 + P313 | If exposed or concerned seek medical attention. |

2.3 Other Hazards: EUH66 Repeated exposure may cause skin dryness or cracking

SECTION 3 – Composition and Information on Ingredients

3.1 Substances

| Chemical Name | CAS Number / EINECS Number / REACH Reg. Number | % (w/w) | EU Classification (64/548/EEC) | CLP/GHS Classification (1272/2008) |
|------------------------|--|---------|--|---|
| Yttrium Oxide | 1314-36-9 / 215-233-5 | <50% | Not dangerous | Not hazardous |
| Methyl Isobutyl Ketone | 108-10-1 / 203-550-1 | 10-50% | F; R11 Xn; R20 Xi; R36/38 R66 | Flam. Liq. 2 (H225) Acute Tox. 4 (H332) Eye Irrit. 2 (H319) STOT SE 3 (H335) |
| Isopropyl Alcohol | 67-63-0 / 200-661-7 | 30-40% | F; R11 | Flam. Liq. 2 (H225) |

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| Chemical Name | CAS Number / EINECS Number / REACH Reg. Number | % (w/w) | EU Classification (64/548/EEC) | CLP/GHS Classification (1272/2008) |
|-----------------------------|--|---------|--------------------------------|---|
| | | | Xi; R36 R67 | Eye Irrit. 2 (H319) STOT SE 3 (H336) |
| Di (2-ethylhexyl) Phthalate | 117-81-7 / 204-211-0 | <10% | Repr. Cat. 1B; R60-61 | Repr. 1B (H360FD) |

Refer to Section for full text of abbreviations

SECTION 4 – First Aid Measures

4.1 Descriptions of First Aid Measures

Immediate first aid measures are appropriate only in cases of acute exposure to high concentrations of vapors and fumes. If exposed or concerned, seek medical advice/attention. Show this Safety Data Sheet to the attending physician.

First Aid:

Eye contact: Rinse cautiously with water for several minutes

Skin contact: Remove contaminated clothing. Rinse skin with plenty of soap and water

Ingestion: Immediately call a poison control center or doctor

See Section 11 for more detailed information on health effects

4.2 Most important symptoms and effects, both acute and delayed: Vapours from this mixture are irritating to the eyes, skin and the respiratory system. Eye irritation signs and symptoms may include redness and pain. Skin irritation signs and symptoms may include dry skin, redness and pain. Respiratory irritation signs and symptoms may include a temporary burning sensation of the nose and throat, coughing, and/or difficulty breathing. Swallowing the liquid may cause aspiration to the lungs with risk of chemical pneumonitis. If material enters the lungs, signs and symptoms may include coughing, choking, wheezing, difficulty breathing, chest congestion, and shortness of breath. The onset of respiratory symptoms may be delayed for several hours after exposure. Breathing of high vapour concentrations may cause central nervous system depression resulting in dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in narcosis.

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SECTION 5 – Fire Fighting Measures

5.1 Extinguishing Media:

Use dry chemical or carbon dioxide. Do not use water on a metal fire.

5.2 Special Hazards Arising from the Substance or Mixture:

Stopyt® 62A is used in metal brazing operations and brazing flames can ignite combustible materials located nearby. Vapors are heavier than air and may travel along the ground or may be moved by ventilation and ignited by pilot lights, other flames, sparks, smoking, electric motors, static discharge or other ignition sources at locations distant from material handling point. Fire fighters should wear fire-fighting protective equipment and a full-face self-contained breathing apparatus. Contact with strong oxidizers may cause fire or explosion.

5.3 Advice for Fire Fighters:

Fire fighters should wear fire-fighting protective equipment and a full-face self-contained breathing apparatus.

SECTION 6 – Accidental Release Measures

6.1 Personal Precautions, Protective Equipment and Emergency Procedures:

Eliminate all sources of ignition such as flares, flames (including pilot lights) and electrical sparks.

6.2 Environmental Precautions:

Use controls to minimize the risk of release to the environment.

6.3 Methods and Material for Containment and Cleaning Up:

Absorb with vermiculite or other absorbent material and place in sealable containers. Dispose in accordance with international, federal, national, state, and local waste disposal regulations.

6.4 Reference to Other Sections:

Refer to Section 8 for personal protective equipment, and Section 13 for disposal information.

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SECTION 7 – Handling and Storage

7.1 Precautions for Safe Handling:

Provide adequate exhaust ventilation whenever using this material in open containers. When transferring material from one container to another ground and bond containers to prevent sparking from static electricity. Wash exposed skin areas after handling.

7.2 Conditions for safe storage, including any incompatibilities:

Store in closed containers in a cool, dry, well-ventilated, fire-resistant area away from oxidizing agents and away from all sources of heat or ignition.

Empty containers could contain residues and could be dangerous. Do not eat or smoke in areas where this material is used or stored.

When not in use, containers should be sealed and stored in a flammable liquids storage cabinet.

7.3. Specific end use(s):

Industrial uses: None identified

Professional uses: None identified

SECTION 8 – Exposure Controls and Personal Protection

8.1 Control Parameters:

Exposure limits and guidelines:

| Chemical Name | OSHA PEL | ACGIH TLV | DFG MAK | EU IOEL | UK OEL | Biological Limit Value |
|-----------------------------|---------------------|-----------------------------|--------------------------|------------------|--|---|
| Yttrium Oxide | 1 mg/m ³ | 1 mg/m ³ | None Established | None Established | 1 mg/m ³ TWA 3 mg/m ³ STEL | None Established |
| Isopropyl Alcohol | 400 ppm | 400 ppm 500 ppm(Ceiling) | 200 ppm TWA | None Established | 400 ppm TWA 500 ppm STEL | Acetone in urine, end of shift at end of workweek 40 mg/L |
| Di (2-ethylhexyl) Phthalate | 5 mg/m ³ | 5 mg/m ³ | 10 mg/m ³ TWA | None Established | 5 mg/m ³ TWA 10 mg/m ³ STEL | MIBK in urine, end of shift 1 mg/L |

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| Chemical Name | OSHA PEL | ACGIH TLV | DFG MAK | EU IOEL | UK OEL | Biological Limit Value |
|------------------------|----------|----------------------------|--------------------|---------------------------------|------------------------------------|------------------------|
| Methyl Isobutyl Ketone | 100 ppm | 50 ppm 75 ppm (Ceiling) | 20 ppm TWA skin | 20 ppm TWA 50 ppm STEL | 50 ppm TWA 100 ppm STEL skin | |

Other jurisdictions may have different exposure limits and control guideline. Users are advised to consult and comply with local regulations where they exist.

Ceiling - the concentration that shall not be exceeded during any part of the work exposure.

STEL (Short Term Exposure Limit) - A 15-minute TWA exposure that should not be exceeded at any time during the workday.

8.2 Exposure Controls:

Recommended Monitoring Procedures: Isopropyl alcohol and methyl isobutyl ketone: collection on charcoal and analysis by gas chromatography. Di (2-ethylhexyl) Phthalate: collection on filters and analysis by gas chromatography. Yttrium oxide: collection on filters with analysis by ICP.

Appropriate Engineering Controls: Use local exhaust ventilation when handling this material and during brazing operations to minimize concentrations of airborne contaminants.

Personal Protective Measures

Eye/face Protection: Safety goggles recommended.

Skin Protection: Wear protective clothing if needed to avoid skin contact. Contaminated clothing should be removed and laundered before reuse.

Hands: Impervious gloves recommended.

Respiratory Protection: Use approved respiratory protective equipment if exposures cannot be maintained below the advised or regulatory limits.

Other protection: Do not eat, drink or smoke when handling these products. Wash hands after handling these products.

SECTION 9 – Physical and Chemical Properties

9.1 Information on basic physical and chemical properties:

Appearance: Pink liquid

Odor Threshold: No data available

Melting/Freezing Point: No data available

Odor: Slight solvent

pH: Not applicable

Boiling Point: Greater than 95°F (35°C)

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Flash Point: 54°F (12°C)
Lower Flammability Limit: No data available
Upper Flammability Limit: No data available
Vapour Density(Air=1): Greater than 1
Solubility: Partially soluble in water

Auto-ignition Temperature: No data available
Viscosity: ISO 2413, 14 (± 3) sec with Sheen 417/4 cup
Oxidizing Properties: None
Molecular Formula: Mixture

9.2 **Other information:** None available

Evaporation Rate: No data available
Vapour Pressure: No data available

Relative Density: No data available
Octanol/Water Partition Coefficient: No data available

Decomposition Temperature: No data available
Explosive Properties: Vapours may be explosive

Specific Gravity (H₂O= 1): No data available
Molecular Weight: Mixture

SECTION 10 – Stability and Reactivity

- 10.1 **Reactivity:** Not reactive under normal conditions
- 10.2 **Chemical stability:** Stable when stored in closed containers at room temperature under normal storage and handling conditions.
- 10.3 **Possibility of hazard reactions:** May react with strong oxidizers to cause fire or explosions
- 10.4 **Conditions to avoid:** Avoid heat and all sources of ignitions.
- 10.5 **Incompatible materials:** Strong oxidizing agents.
- 10.6 **Hazardous decomposition products:** Oxides of carbon.

SECTION 11 – Toxicological Information

11.1 **Information on toxicological effects:**

Potential health effects:

Eye contact: May cause moderate eye irritation, redness, tearing and blurred vision.

Skin contact: Prolonged or repeated contact with product may cause moderate irritation, de-fatting and dermatitis. Isopropyl Alcohol and MIBK may be absorbed through the

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skin with possible systemic effects.

- Inhalation:** Inhalation of vapours may cause nasal and respiratory tract irritation and central nervous system effects including dizziness, weakness, fatigue, nausea, headache and possible unconsciousness.
- Ingestion:** Ingesting isopropyl alcohol or methyl isobutyl ketone may cause nausea, vomiting, bleeding, headache, disorientation, dizziness, kidney damage, and possible unconsciousness. Di(2-ethylhexyl) Phthalate ingestion may cause gastrointestinal upsets.
- Acute toxicity:** Di (2-ethylhexyl) Phthalate: Inhalation LC50 4 Hr >10,620 mg/m³
Isopropyl alcohol: Inhalation LC50 6 Hr >10,000 mg/m³
Yttrium oxide: Inhalation data not available
- Skin corrosion/irritation:** No additional data available for product. Ingredients are not skin irritants.
- Eye damage/irritation:** No additional data available for product.
- Respiratory irritation:** No additional data available for product. Ingredients are respiratory irritants.
- Skin sensitization:** No additional data available for product. Ingredients are not skin sensitizers.
- Germ cell mutagenicity:** No additional data available for product. Ingredients are not germ cell mutagens.
- Carcinogenicity:** No data available for product. Ingredients are not carcinogens.
- Reproductive toxicity:** Animal tests show that Di (2-ethylhexyl) Phthalate possibly causes toxicity to human reproduction or development.
- Specific target organ toxicity:**
- Single exposure:** No data available.
 - Repeat exposure:** Prolonged exposure to methyl isobutyl ketone can cause central nervous depression, possible liver and kidney damage.

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SECTION 12 – Ecological Information

- 12.1 Toxicity:**
Methyl isobutyl ketone: LC50 Pimephales promelas (fathead minnow) 505 mg/L 96; EC50: Daphnia magna 3682 mg/L/24 hr; ErC50 Selenastrum capricornutum (Green algae) 400 mg/L/96 hr;
Isopropanol: LC50 fathead minnows 11,130 mg/L/48 hr; LC50 brown shrimp 1400 mg/L/48 hr
Di (2-ethylhexyl) Phthalate: LC50 Oncorhynchus mykiss >19.5 mg/L/96 hr. ErC50 Algae (selenastrum capricornutum) >0.1 mg/L/96 hr EC50 daphnia magna >100 mg/L/48 hr.
- 12.2 Persistence and degradability:**
Methyl isobutyl ketone: Readily biodegradable
Isopropanol: Readily biodegradable
Di (2-ethylhexyl) Phthalate: Readily biodegradable
- 12.3 Bio-accumulative potential:** Methyl isobutyl ketone has an estimated BCF of 2 and isopropanol has an estimated BCF of 3 suggesting that the potential for bioaccumulation is low. Experimental data indicate that Di (2-ethylhexyl) Phthalate may bio-accumulate.
- 12.4 Mobility in soil:** When released into soil and water, isopropanol and methyl isobutyl ketone may evaporate to a moderate extent.
- 12.5 Results of PVT or vPvB assessment:** None required.
- 12.6 Other adverse effects:** None known.

SECTION 13 – Disposal Considerations

13.1 Waste management

This material may be subject to U.S. hazardous waste disposal regulations due to the characteristic of ignitability. Waste materials should be profiled and managed in accordance with applicable federal, state and local regulations.

13.2 Additional information

Please refer to the European list (Decision no. 2000/532/CE as modified) to identify your appropriate European Waste Code (EWC) and ensure national and/or regional regulations are complied with. When disposing of waste and assigning EWC any possible contamination during use will need to be considered and expert guidance sought as necessary.

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SECTION 14 – Transport Information

| Regulatory Authority | 14.1 UN Number | 14.2 UN Proper Shipping Name | 14.3 Hazard Class(s) | 14.4 Packing Group | 14.5 Environmental Hazards |
|----------------------|----------------|---|----------------------|--------------------|----------------------------|
| US DOT | UN1993 | Flammable liquids, n.o.s. (methyl isobutyl ketone, isopropanol) | 3 | II | |
| EU ADR/RID | UN1993 | Flammable liquids, n.o.s. (methyl isobutyl ketone, isopropanol) | 3 | II | |
| IMDG | UN1993 | Flammable liquids, n.o.s. (methyl isobutyl ketone, isopropanol) | 3 | II | |
| IATA/ICAO | UN1993 | Flammable liquids, n.o.s. (methyl isobutyl ketone, isopropanol) | 3 | II | |

14.6 **Special precautions for user:** None known

14.7 **Transport in bulk according to Annex III MARPOL 73/78 and the IBC Code:** Not determined.

SECTION 15 – Regulatory Information

- All product ingredients are listed on the U.S. Toxic Substances Control Act (TSCA) chemical inventory.
- Di (2-ethylhexyl) Phthalate and methyl isobutyl ketone are subject to the reporting requirements of Section 313 of Title III of the U.S. Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.
- Methyl isobutyl ketone and Di (2-ethylhexyl) Phthalate are listed on the U.S. Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) as hazardous substances.
- This product contains the following chemicals which are listed on the list of “Chemicals known to the State of California to cause cancer or reproductive toxicity:”

| | | |
|----------------------------|----------|--------|
| Di(2-ethylhexyl) Phthalate | 117-81-7 | <10% |
| Methyl isobutyl ketone | 108-10-1 | 10-50% |

SECTION 16 – Other Information

Revision Summary:

SDS edition: 4

Changes: August, 2013 – Formatting changes to comply with corporate rebranding requirements.

SDS edition: 5

Changes: December, 2014 - **Section 1.2:** Updated the product's authorized use description. **Section 2.2:** Added the REACH authorization number.

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SDS edition: 6

Changes: April, 2015 – Updated website in Section 1; Updated Hazard Classification for DEHP (changed from Repr Cat 2 to Repr Cat 1B).

Full text of Section 3 abbreviations:

F Highly Flammable

Xi Irritant

Xn Harmful

Repr. Cat. 1B Reproductive toxicity category 1B

R11 Highly Flammable

R20 Harmful by inhalation.

R36/38 Irritating to eyes and skin.

R66 Repeated exposure may cause skin dryness or cracking

R67 May cause drowsiness and dizziness.

R60-61 May impair fertility. May cause harm to the unborn child.

Acute Tox. 4 Acute Toxicity Category 4

Eye Irrit. 2 Eye Irritation Category 2

Flam. Liq. 2 Flammable Liquid Category 2

STOT SE 3 Specific Target Organ Toxicity Category 3

Repr. 1B Toxic to Reproduction Category 1B

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

H336 Vapours may cause drowsiness and dizziness.

H360FD May damage fertility or the unborn child.

Reasonable care has been taken in the preparation of information contained in this Safety Data Sheet and the information is provided in good faith. Information provided in this Safety Data Sheet has been prepared by competent and appropriately qualified and trained persons according to the US OSHA Hazard Communication Standard. Morgan Advanced Materials - Wesgo Metals® assumes no responsibility as to the accuracy of information drawn from other sources. No warranty, expressed or implied, is made.